As submitted to the Securities and Exchange Commission confidentially on May 14, 2021.
This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains strictly confidential.
Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Acumen Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	2836	13-6410829
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

427 Park St.
Charlottesville, VA 22902
(434) 297-1000
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Daniel O'Connell
Chief Executive Officer
Acumen Pharmaceuticals, Inc.
427 Park St.
Charlottesville, VA 22902
(434) 297-1000
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Darren DeStefano Katherine Denby Cooley LLP 11951 Freedom Dr. #1500 Reston, Virginia 20190 (703) 456-8039	Patrick O'Brien Thomas J. Danielski Ropes & Gray LLP Prudential Tower 800 Boylston Street Boston, MA 02199 (617) 951-7000

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, $0.0001 par value per share	$	$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the offering price of additional shares that the underwriters have the option to purchase.
(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated , 2021

PRELIMINARY PROSPECTUS

Shares

Common Stock

This is Acumen Pharmaceuticals, Inc.'s initial public offering. We are selling shares of our common stock.

We expect the public offering price to be between $ and $ per share. Currently, no public market exists for the shares of our common stock. We intend to apply to list our common stock on The Nasdaq Global Market under the trading symbol "ABOS."

We are an "emerging growth company" as defined under the U.S. federal securities laws and, as such, will be subject to reduced public company reporting requirements for this prospectus and future filings.

Investing in our common stock involves risks that are described in the "Risk Factors" section beginning on page 11 of this prospectus.

	Per Share	Total
Initial public offering price	$	$
Underwriting discount(1)	$	$
Proceeds, before expenses, to us	$	$

(1) See the section titled "Underwriting" for additional information regarding underwriting compensation.

The underwriters may also exercise their option to purchase up to an additional shares of common stock from us, at the public offering price, less the underwriting discount, for 30 days after the date of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The shares of common stock will be ready for delivery on or about , 2021.

BofA Securities **Credit Suisse** **Stifel**

UBS Investment Bank

The date of this prospectus is , 2021

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Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide you. We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where such offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of the common stock.

For investors outside of the United States: we have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

All trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert their rights thereto.

PROSPECTUS SUMMARY

This summary highlights, and is qualified in its entirety by, information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus carefully, especially the sections titled "Risk Factors," "Business," and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes appearing elsewhere in this prospectus, before making an investment decision. As used in this prospectus, unless the context otherwise requires, references to "we," "us," "our," "the company," "Acumen" and "Acumen Pharmaceuticals" refer to Acumen Pharmaceuticals, Inc.

Overview

We are a clinical-stage biopharmaceutical company developing a novel disease-modifying approach to target what we believe to be a key underlying cause of Alzheimer's disease, or AD. Alzheimer's disease is a progressive neurodegenerative disease of the brain that leads to loss of memory and cognitive functions and ultimately results in death. Our scientific founders pioneered research on soluble amyloid-beta oligomers, or AbOs, globular assemblies of the amyloid-beta, or Ab, peptide that are distinct from Ab monomers and amyloid plaques. Based on decades of research and supporting evidence, AbOs have gained increasing scientific acceptance as a primary toxin involved in the initiation and propagation of AD pathology. We are currently focused on advancing a targeted immunotherapy drug candidate, ACU193, and establishing proof of mechanism in early AD patients. ACU193 is a humanized monoclonal antibody that selectively targets AbOs, has demonstrated functional and protective effects in in vitro assays, and has demonstrated in vivo safety and pharmacologic activity in multiple animal species including transgenic models for AD. We initiated our Phase 1 clinical trial of ACU193 in the second quarter of 2021 with the objective to evaluate its safety and tolerability and explore its pharmacokinetics and target engagement. This trial is enrolling patients with mild dementia or mild cognitive impairment, or MCI, due to AD, conditions referred to as "early AD." Our ACU193 Phase 1 data intended to evaluate safety and tolerability and demonstrate clinical proof of mechanism are expected by the fourth quarter of 2022.

Understanding the Foundation of Our Therapeutic Approach

Historically, the primary hypothesis of decades of AD research, known as the amyloid hypothesis, held that AD dementia is the clinical consequence of Ab peptide monomers accumulating into extracellular amyloid plaques, or amyloid plaques, which in turn contribute to the formation of intracellular neurofibrillary tangles composed of the tau protein and cause inflammation, ultimately leading to neuronal cell loss and progressive dementia. Based on this hypothesis, a number of monoclonal antibodies currently or previously in development for AD have primarily targeted either Ab monomers or amyloid plaques; we refer to this broadly defined "class" as anti-Ab/plaque antibodies. Several of these antibodies are currently in late-stage development or are awaiting regulatory approval, and collectively they have provided a biological foothold for treating AD. However, the clinical data available to date indicate some of the potential limitations of these approaches with respect to clinically meaningful patient benefit and safety.

Our therapeutic approach focuses on targeting AbOs, which we believe are the most toxic and pathogenic form of Ab relative to Ab monomers and amyloid plaques. Growing evidence, spurred by advances in AD research and analytic techniques, supports our view that AbOs are the main instigators of AD neurodegeneration. AbOs have been observed to be potent neurotoxins that cause both acute synaptic toxicity and induce neurodegeneration. Experimentally in animal models, the accumulation of AbOs is associated with core AD neuropathologies, including synapse deterioration and loss, tau phosphorylation, and inflammation. Research has also shown that the accumulation of AbOs is associated with AD-related behavioral deficits, such as learning and memory impairment. In light of this evidence, we believe that blocking the toxicity of AbOs

is the most promising approach for the treatment of AD, which led us to discover and develop ACU193.

ACU193 for the Treatment of AD

Our product candidate, ACU193, is the first clinical-stage humanized monoclonal antibody discovered and developed to target soluble AbOs and was developed in partnership with Merck & Co., Inc., or Merck. We believe that ACU193 represents a differentiated approach from current and prior AD immunotherapies because it is highly selective for AbOs. ACU193 has a nanomolar affinity for AbOs, over 500-fold greater selectivity for AbOs over Ab monomers, and limited or no binding to amyloid plaques.

We believe ACU193 has characteristics that make it a promising potential treatment for AD relative to other antibodies that do not selectively target AbOs. ACU193 has been engineered to reduce immune effector function signaling and designed to avoid binding to vascular amyloid. These attributes of ACU193 are expected to reduce the incidence of amyloid-related imaging abnormalities, or ARIA, a common adverse event observed with amyloid plaque-targeting immunotherapies currently in development for AD.

Our Differentiated Approach to the Treatment of AD

We believe ACU193 has several potential advantages in comparison to other AD drugs that are currently approved or in development:

Differentiated mechanism of action:

- Potentially addresses an underlying cause of AD: AbOs, a novel, more toxic and more pathogenic target;
- Selectively binds to AbOs; and
- Binds to a broad spectrum of toxic AbOs.

Potential for symptomatic improvement and disease modification:

- By selectively targeting and neutralizing AbO toxicity, we believe that ACU193 has the potential to provide a reduction in cognitive decline in addition to disease-modifying effects, including synaptic protection and decreased neurodegeneration.

Potential for higher dosing:

- Selectivity for AbOs is likely to result in greatly reduced rates of ARIA, allowing a broad therapeutic window.

Summary of Clinical Development Plan

In the second quarter of 2021, we initiated a U.S.-based, multi-center, randomized, double-blind, placebo-controlled, single and multiple ascending dose Phase 1 clinical trial of ACU193 in patients with early AD. The early AD patient group is comprised of individuals who have mild dementia or MCI due to AD, and our trial excludes patients with moderate to severe AD dementia. We plan to enroll 62 patients across seven cohorts, consisting of a single-ascending dose Part A (32 participants) and an overlapping multiple-ascending dose Part B (30 participants).

The main objectives of the trial are to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics, and AbO target engagement of single and multiple ascending doses of ACU193 administered by intravenous infusion. Exploratory outcomes include cognitive scales and computerized cognitive testing. Our goal is to establish proof of mechanism of ACU193 in early AD patients in order to enable rapid progression into an adaptive Phase 2/3 clinical trial in 2023. We intend to provide periodic updates of the status of the Phase 1 trial and anticipate reporting proof of mechanism results in the fourth quarter of 2022.

Summary of Our Nonclinical Data

In nonclinical studies conducted by Merck and Acumen, ACU193 has demonstrated promising characteristics which indicate its potential as a therapy for the treatment of AD. ACU193 has high selectivity, with binding affinity studies showing that it has over 500-fold binding selectivity for AbOs compared to Ab monomers and an ex vivo study we conducted with brain tissue from AD patients showing limited or no binding to amyloid plaques. ACU193 binds to a broad spectrum of small to large soluble AbOs. Additionally, ACU193 has been shown in ex vivo animal studies to offer protection from synaptic toxicity by inhibiting binding of AbOs to primary hippocampal neurons. ACU193 has also demonstrated suitable in vivo pharmacology, target engagement, blood-brain barrier penetration and reduction of behavioral deficits. Based on nonclinical studies conducted using animal models, AbO target engagement has the potential to be achieved at doses of ACU193 that will be tested in the clinic. Lastly, ACU193 has been shown to have an adequate safety margin in Good Laboratory Practice, or GLP, toxicity studies conducted in two animal species. These data indicate that ACU193 has the potential to offer patients a reduction in cognitive decline.

Our Strategy

Our objective is to transform the treatment of AD, and potentially other diseases, by developing innovative therapeutics that target the primary drivers of disease pathology. Our initial therapeutic approach is focused on inhibiting and reducing the toxic activity of AbOs, which may allow for synaptic protection and decreased neurodegeneration, leading to more effective treatment for patients with early AD. To achieve this objective, we are pursuing the following strategies:

- Rapidly advance ACU193 through clinical development in patients with early AD;
- Evaluate combination approaches to complement our core ACU193 monotherapy strategy;
- Selectively explore potential of ACU193 for other diseases;
- Expand our product portfolio by developing additional molecules; and
- Optimize value of ACU193 and future drug candidates in major markets.

Our Team

We are led by an experienced management team with deep scientific and drug development knowledge and a strong commitment to developing safe and effective therapies for patients. Collectively, our management team has a rich set of experiences in industry as well as in academia, leading clinical development programs for both public and venture-backed clinical-stage companies, as well as with large biopharmaceutical companies, such as Eli Lilly & Co, or Eli Lilly. We are led by our President and Chief Executive Officer, Daniel O’Connell, our Chief Medical Officer, Eric Siemers, M.D. and our Chief Operating Officer, Russell Barton. Our executive team is complemented by our drug development experts, approximately half of whom hold Ph.D. or M.D. degrees and are former members of Eli Lilly’s global AD clinical development organization. These team members, including Dr. Siemers and Mr. Barton, have worked for over a decade on early- through late-phase AD

drug development, including numerous early-phase AD trials and five large multi-national Phase 3 studies in AD. Together, our management team brings expertise across relevant disciplines, including neuroscience, neurology, translational science, protein manufacturing, biomarker development and quality and regulatory affairs. We believe our team's experience and longstanding working relationships position us to take ACU193 through late-stage clinical development and potentially through registration.

Our company is supported by a group of institutional investors, and we have raised approximately $67.5 million in funding as of December 31, 2020. Our key investors include BlackRock, PBM Capital, RA Capital Management, Rock Springs Capital, Sands Capital and several other private investors.

Risks Factors Summary

Our business is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the section titled "Risk Factors" and include, among others:

- We are a clinical-stage biopharmaceutical company with a limited operating history.
- We have no product candidates approved for commercial sale, we have never generated any revenue from sales and we may never be profitable.
- Even if this offering is successful, we will require substantial additional funding to finance our operations, complete the development and commercialization of ACU193 for AD and evaluate future product candidates. If we are unable to raise this funding when needed, we may be forced to delay, reduce or eliminate our drug development programs or other operations.
- We are substantially dependent on the success of ACU193, our sole product candidate, which will require significant clinical testing before we can seek regulatory approval and potentially launch commercial sales, and which may not be successful in clinical trials, receive regulatory approval or be successfully commercialized, even if approved.
- We have concentrated our research and development efforts on the treatment of AD, a field that has to date seen very limited success in drug development.
- Our approach to the potential treatment of AD is based on a novel therapeutic approach, which exposes us to unforeseen risks.
- Nonclinical and clinical drug development involves a lengthy, expensive and uncertain process. The results of nonclinical studies and early clinical trials are not always predictive of future results. ACU193 or any other product candidate that we advance into clinical trials may not achieve favorable results in later clinical trials, if any, or receive marketing approval.
- Clinical failure can occur at any stage of clinical development and we have never completed a clinical trial or submitted a biologics license application, or BLA, or marketing authorization application, or MAA.
- We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.
- We currently rely on CMOs to supply components of and manufacture ACU193. The loss of any of these CMOs or the failure of any of them to meet their obligations to us could affect our ability to develop ACU193 in a timely manner.

- We intend to rely on CROs and other third parties to conduct, supervise and monitor a significant portion of our research and nonclinical testing and clinical trials for our product candidates, and if those third parties do not successfully carry out their contractual duties, comply with regulatory requirements or otherwise perform satisfactorily, we may not be able to obtain regulatory approval or commercialize product candidates, or such approval or commercialization may be delayed, and our business may be substantially harmed.

- We face significant competition in an environment of rapid technological and scientific change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer or more effective than ours.

- If we are unable to enter into a commercial collaboration or, alternatively, establish internal sales, marketing and distribution capabilities, for ACU193 or any other product candidate that may receive regulatory approval, we may not be successful in commercializing those product candidates if and when they are approved.

- If we are unable to obtain and maintain sufficient intellectual property protection for our product candidate, and other proprietary technologies we develop, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our product candidate, and other proprietary technologies if approved, may be adversely affected.

- We have identified a material weakness in our internal control over financial reporting which could, if not remediated, result in material misstatements in our financial statements.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For so long as we remain an emerging growth company, we may take advantage of relief from certain reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include:

- reduced obligations with respect to financial data, including only being required to present two years of audited financial statements, in addition to any required unaudited interim financial statements with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;

- an exception from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;

- reduced obligations with respect to disclosure about our executive compensation arrangements in our periodic reports, proxy statements and registration statements;

- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements; and

- an exemption from compliance with the requirements of the Public Company Accounting Oversight Board regarding the communication of critical audit matters in the auditor's report on financial statements.

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We may take advantage of these provisions until the last day of the fiscal year ending after the fifth anniversary of this offering or such earlier time that we no longer qualify as an emerging growth company. We will cease to qualify as an emerging growth company on the date that is the earliest of: (i) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering, (ii) the last day of the fiscal year in which we have more than $1.07 billion in total annual gross revenues, (iii) the date on which we are deemed to be a “large accelerated filer” under the rules of the U.S. Securities and Exchange Commission, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, or (iv) the date on which we have issued more than $1.0 billion of non-convertible debt over the prior three-year period. We may choose to take advantage of some but not all of these reduced reporting burdens. We have taken advantage of certain reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different than you might obtain from other public companies in which you hold equity interests.

In addition, under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the extended transition period to comply with new or revised accounting standards and to adopt certain of the reduced disclosure requirements available to emerging growth companies. As a result of the accounting standards election, we will not be subject to the same implementation timing for new or revised accounting standards as other public companies that are not emerging growth companies, which may make comparison of our financials to those of other public companies more difficult. As a result of these elections, the information that we provide in this prospectus may be different than the information you may receive from other public companies in which you hold equity interests. In addition, it is possible that some investors will find our common stock less attractive as a result of these elections, which may result in a less active trading market for our common stock and higher volatility in our share price.

We are also a “smaller reporting company,” meaning that the market value of our shares held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700 million and our annual revenue was less than $100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our shares held by non-affiliates is less than $250 million or (ii) our annual revenue was less than $100 million during the most recently completed fiscal year and the market value of our shares held by non-affiliates is less than $700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Corporate Information

We were incorporated under the laws of the State of Delaware in 1996. Our principal executive offices are located at 427 Park St., Charlottesville, Virginia 22902 and our telephone number is (434) 297-1000. Our website address is http://www.acumenpharm.com/. The information contained on, or accessible through, our website is not incorporated by reference into this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

The Offering

Common stock offered by us	shares.
Underwriters' option to purchase additional shares	shares.
Common stock to be outstanding immediately after this offering	shares (or shares if the underwriters exercise in full their option to purchase additional shares).
Use of proceeds	We estimate that the net proceeds from this offering will be approximately $ million, (or approximately $ million if the underwriters exercise in full their option to purchase up to additional shares of common stock), assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, to and the remainder for working capital and other general corporate purposes. See the section titled "Use of Proceeds" for additional information.
Risk factors	You should read the section titled "Risk Factors" for a discussion of factors you should consider carefully, together with all the other information included in this prospectus, before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	"ABOS"

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of December 31, 2020, after giving effect to the conversion of all outstanding shares of our convertible preferred stock, including 711,203 shares of our Series A convertible preferred stock, 11,231,511 shares of our Series A-1 convertible preferred stock, and 17,674,469 shares of our Series B convertible preferred stock, into an aggregate of shares of common stock, as well as the automatic conversion of an outstanding preferred stock warrant convertible into shares of our common stock based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and excludes:

- 1,492,303 shares of our common stock issuable upon the exercise of options under our Amended and Restated Stock Performance Plan, or the Prior Plan, outstanding as of December 31, 2020, at a weighted-average exercise price of $0.76;
- shares of our common stock issuable upon the exercise of options under the Prior Plan granted subsequent to December 31, 2020, at a weighted-average exercise price of $;

- 574,760 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of December 31, 2020 at an exercise price of $3.00;
- shares of our common stock reserved for future issuance under the Prior Plan, which shares will cease to be available for issuance at the time our 2021 Equity Incentive Plan, or the 2021 Plan, becomes effective and will be added to, and become available for issuance under, the 2021 Plan;
- shares of our common stock reserved for future issuance under our 2021 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the 2021 Plan; and
- shares of our common stock reserved for future issuance under our 2021 Employee Stock Purchase Plan, or the ESPP, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the ESPP.

Unless otherwise indicated, all information contained in this prospectus, including the number of shares of common stock that will be outstanding after this offering, assumes or gives effect to:

- the automatic conversion of all outstanding shares of our convertible preferred stock into shares of our common stock, which will occur upon the closing of this offering;
- the automatic exercise and conversion of an outstanding preferred stock warrant convertible into shares of our common stock, which will occur upon the closing of this offering (based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus);
- a 30-for-1 reverse stock split of our common stock and preferred stock effected on November 20, 2020;
- a -for- reverse stock split of our common stock effected on , 2021;
- the filing and effectiveness of our amended and restated certificate of incorporation upon the closing of this offering;
- no exercise of the outstanding options and common stock warrants referred to above after December 31, 2020; and
- no exercise by the underwriters of their option to purchase additional shares of our common stock.

SUMMARY FINANCIAL DATA

The following tables set forth our summary financial data for our business. We have derived the statement of operations data for the years ended December 31, 2019 and 2020 and the balance sheet data as of December 31, 2020 from our audited financial statements appearing elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that should be expected in the future.

You should read the following summary financial data together with our financial statements and the related notes thereto included elsewhere in this prospectus and the section of this prospectus titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” The summary financial data in this section are not intended to replace our financial statements and are qualified in their entirety by our financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31, 2019	Year Ended December 31, 2020
	(in thousands, except share and per share data)	
Statement of Operations Data:		
Grant and other revenue	$ 1,697	$ 1,436
Operating expenses:		
Research and development	8,576	7,997
General and administrative	926	1,351
Total operating expenses	9,502	9,348
Loss from operations	(7,805)	(7,912)
Other income (expense)	(102)	587
Net loss	(7,907)	(7,325)
Contribution related to common stock exchanged for Series A convertible preferred stock	221	—
Net loss attributable to common stockholders	$ (7,686)	$ (7,325)
Net loss per share, basic and diluted	$ (11.97)	$ (11.73)
Weighted average shares outstanding, basic and diluted	642,053	624,635
Pro forma net loss per common share, basic and diluted (1)		$
Weighted average shares used to compute pro forma net loss per share, basic and diluted (1)		

(1) The unaudited pro forma net loss per share for the year ended December 31, 2020 was computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock into shares of common stock, as well as the automatic exercise and conversion of an outstanding preferred stock warrant into common stock and the settlement of the preferred stock tranche rights liability, as if such conversions had occurred at the beginning of the period, regardless of their issuance dates.

	As of December 31, 2020		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)
	(in thousands)		
Balance Sheet Data:			
Cash and cash equivalents	$ 43,777	$	$
Working capital(3)	38,062		
Total assets	44,429		
Preferred stock tranche rights liability	5,033		
Preferred stock warrant liability	380		
Convertible preferred stock	56,653		
Accumulated deficit	(26,965)		
Total stockholders' deficit	(18,591)		

(1) Gives effect to the conversion of all of the outstanding shares of our convertible preferred stock into an aggregate of shares of our common stock upon the closing of this offering, as well as the automatic exercise and conversion of an outstanding preferred stock warrant into shares of our common stock (based on assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus) as well as the settlement of the preferred stock tranche rights liability, as if such conversions had occurred on December 31, 2020.

(2) Gives further effect to the sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us. This pro forma as adjusted information is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing. Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and stockholders' equity by $ million, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) We define working capital as current assets less current liabilities. For further details regarding our current assets and current liabilities, see our financial statements appearing elsewhere in this prospectus.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this prospectus, including our financial statements and related notes, before deciding whether to purchase shares of our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that affect us. If any of the following risks are realized, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all of your investment.

Risks Related to our Financial Position and Capital Needs

We are a clinical-stage biopharmaceutical company with a limited operating history.

We are a clinical-stage biopharmaceutical company with a limited operating history focused on pioneering a novel disease-modifying therapeutic approach to treat Alzheimer's disease, or AD. We were incorporated in 1996 and were party to an exclusive license and research collaboration with Merck & Co., Inc., or Merck, in 2003. Although we acquired the exclusive rights to ACU193 from Merck in 2011, following Merck's strategic decision to focus its AD development efforts on a different product candidate, we did not recommence meaningful operations until we completed our first institutional fundraising in 2018. As a result, we have a very limited operating history, which may make it difficult to evaluate the success of our business to date and assess our future viability. Drug development is a highly uncertain undertaking and involves a substantial degree of risk. We received clearance of our Investigational New Drug application, or IND, for our sole product candidate, ACU193, and initiated our Phase 1 clinical trial in the second quarter of 2021. To date, we have not completed a clinical trial, initiated a pivotal trial, obtained marketing approval for any product candidate, manufactured a commercial scale product candidate, arranged for a third party to do so on our behalf or conducted sales or marketing activities necessary for successful product candidate commercialization. Our short operating history makes any assessment of our future success and viability subject to significant uncertainty. We will likely encounter risks and difficulties frequently experienced by early-stage biopharmaceutical companies in rapidly evolving fields, and we have not yet demonstrated an ability to overcome such risks and difficulties successfully. If we do not address these risks and difficulties successfully, our business will suffer.

We have no product candidates approved for commercial sale, we have never generated any revenue from sales and we may never be profitable.

We have no product candidates approved for sale, have never generated any revenue from sales, have never been profitable and do not expect to be profitable in the foreseeable future. We have incurred net losses in each year since our inception. For the years ended December 31, 2019 and 2020, our net losses were $7.9 million and $7.3 million, respectively. We had an accumulated deficit of $27.0 million as of December 31, 2020.

To date, we have devoted most of our financial resources to research and development of ACU193, including our nonclinical development activities of ACU193, and corporate overhead. We expect that it will be several years, if ever, before we have a product candidate approved and ready for commercialization. We expect to continue to incur losses for the foreseeable future, and we expect these losses to increase as we continue our development of, and seek regulatory approvals for, ACU193 and any other product candidate we may develop in the future, prepare for and begin the commercialization of any approved product candidates and add infrastructure and personnel to support our drug development efforts and operations as a public company. We anticipate that any such losses could be significant for the next several years. These net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital. Further, these net losses may fluctuate significantly from quarter-to-quarter or year-to-year. To become and remain profitable, we must develop and eventually commercialize ACU193 or another drug with significant revenue.

We may never succeed in developing a commercial drug and, even if we succeed in commercializing one or more product candidates, we may never generate revenues that are large enough to achieve profitability. In addition, we may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown challenges. Because of these numerous risks and uncertainties, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to generate revenues or achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis, and we will continue to incur substantial research and development costs and other expenditures to develop and market additional product candidates.

Even if this offering is successful, we will require substantial additional funding to finance our operations, complete the development and commercialization of ACU193 for AD and evaluate future product candidates. If we are unable to raise this funding when needed, we may be forced to delay, reduce or eliminate our drug development programs or other operations.

To date, we have used substantial amounts of cash to fund our operations, and we expect our expenses to increase substantially in the foreseeable future in connection with our ongoing activities, particularly as we continue the research and development, conduct clinical trials of, and seek marketing approval for, ACU193. Developing ACU193 and conducting clinical trials for the treatment of AD and any other product candidates or indications that we may pursue in the future will require substantial amounts of capital. In addition, if we obtain marketing approval for ACU193 or any future product candidates, we expect to incur significant commercialization expenses related to the commercialization of the product, whether we are commercializing alone or with a collaborator. Furthermore, upon the closing of this offering, we expect to incur additional significant expenses associated with operating as a public company.

Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. As of December 31, 2020, we had $43.8 million in cash and cash equivalents. We believe that our existing capital resources, together with the net proceeds from this offering, will be sufficient to fund our projected operations through   . However, changing circumstances may cause us to increase our spending significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. We may need to raise additional funds sooner than we anticipate if we choose to expand more rapidly than we presently anticipate.

The amount and timing of our future funding requirements will depend on many factors, some of which are outside of our control, including but not limited to:

- the progress, costs, timing and results of our Phase 1 trial and other clinical trials of ACU193, including for potential additional indications that we may pursue beyond AD;
- the requirements of the U.S. Food and Drug Administration, or the FDA, and European Medicines Agency, or the EMA, for clinical trials and nonclinical studies and other work, for review and approval of ACU193 for AD;
- the outcome, costs and timing of seeking and obtaining FDA, EMA and any other regulatory approvals;
- the number and characteristics of product candidates that we pursue;
- our ability to obtain sufficient quantities of our product candidates from our third-party manufacturers;
- our need to expand our research and development activities;

- the costs associated with securing and establishing commercialization capabilities if we were to elect to commercialize one or more products on our own;
- the economics and other terms, timing of and success of any collaboration, licensing or other arrangements into which we may enter for the commercialization of our products;
- the costs and other terms, timing and success, of acquiring, in-licensing or investing in businesses, product candidates and technologies;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights;
- our need and ability to retain management and hire scientific and clinical personnel;
- the effect of competing drugs and product candidates and other market developments; and
- our need to implement additional internal systems and infrastructure, including financial and reporting systems.

Additional funding may not be available to us on acceptable terms or at all. Any such funding may result in dilution to stockholders, imposition of debt covenants and repayment obligations or other restrictions that may affect our business. We also could be required to seek funds through arrangements with collaborative partners or otherwise that may require us to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us. Any funds we raise may not be sufficient to enable us to continue to implement our long-term business strategy. Further, our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic. If we are unable to raise sufficient additional capital on a timely basis, we could be forced to curtail our planned operations and the pursuit of our business strategy, which would have a material adverse effect on the value of our common stock.

Risks Related to the Development of our Product Candidates

We are substantially dependent on the success of ACU193, our sole product candidate, which will require significant clinical testing before we can seek regulatory approval and potentially launch commercial sales, and which may not be successful in clinical trials, receive regulatory approval or be successfully commercialized, even if approved.

We are early in our development efforts. To date, we have invested substantially all of our efforts and financial resources in the research and development of ACU193, which is currently our only product candidate. Before seeking marketing approval from regulatory authorities for the sale of ACU193, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the drug in humans. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA, or comparable foreign regulatory authorities, and we may never receive such regulatory approval. We cannot be certain that ACU193 will be successful in clinical trials. Further, ACU193 may not receive regulatory approval even if it is successful in clinical trials. If we do not receive regulatory approvals for ACU193, we may not be able to continue our operations. Our prospects, including our ability to finance our operations and generate revenue, will depend entirely on the successful development, regulatory approval and commercialization of ACU193 by us or

by one or more of our partners. The clinical and commercial success of ACU193 will depend on a number of factors, including the following:

- successful patient enrollment in our Phase 1 and other clinical trials of ACU193;
- sufficiency of our financial and other resources to complete the necessary clinical trials;
- the results from our Phase 1 clinical trial and future clinical trials of ACU193;
- the frequency and severity of adverse effects of ACU193;
- the ability of third-party manufacturers to manufacture supplies of ACU193 and to develop, validate and maintain a commercial-scale manufacturing process that is compliant with current good manufacturing practices, or cGMP;
- our ability to demonstrate ACU193's safety and efficacy to the satisfaction of the FDA and foreign regulatory authorities in order to receive necessary marketing approvals for ACU193;
- whether we are required by the FDA to conduct additional clinical trials prior to the approval to market ACU193 and whether the FDA may disagree with the number, design, size, conduct, implementation or other aspects of our clinical trials;
- whether the FDA may require implementation of a Risk Evaluation and Mitigation Strategy, or REMS, as a condition of approval or post-approval;
- our ability to successfully commercialize ACU193, if approved for marketing and sale by the FDA or foreign regulatory authorities, whether alone or in collaboration with others;
- our success in educating physicians and patients about the benefits, administration and use of ACU193;
- acceptance of ACU193 as safe and effective by patients and the medical community;
- the availability, perceived advantages, relative cost, relative safety and relative efficacy of alternative and competing treatments;
- achieving and maintaining compliance with all regulatory requirements applicable to ACU193, including any required post-marketing approval commitments;
- effectively competing with other AD therapies;
- the effectiveness of our own or any future collaborators' marketing, pricing, coverage and reimbursement, sales and distribution strategies and operations;
- our ability to maintain our existing patents and obtain newly issued patents that cover ACU193 and to enforce such patents and other intellectual property rights in and to ACU193;
- our ability to avoid third-party intellectual property claims;
- the availability of third-party coverage and adequate reimbursement for ACU193 and any other product candidates, once approved; and
- a continued acceptable safety, tolerability and efficacy profile of ACU193 following approval.

Many of these factors are beyond our control. Accordingly, we cannot assure you that we will ever be able to generate revenue through the sale of ACU193. If we are not successful in commercializing ACU193, or are significantly delayed in doing so, our business will be materially harmed.

We have concentrated our research and development efforts on the treatment of AD, a field that has to date seen very limited success in drug development.

We have focused our research and development efforts solely on developing effective treatments for AD. Collectively, efforts by pharmaceutical companies in the field of AD have seen very limited successes in drug development. There are few approved products available for patients with AD.

Our future success is highly dependent on the successful development of ACU193 for treating AD. The development and, if approved, commercialization of ACU193 subjects us to a number of challenges, including ensuring that we select an effective dose of ACU193, executing appropriate clinical trials to test for safety and efficacy and obtaining regulatory approval from the FDA and other regulatory authorities. We cannot be sure that ACU193, or any other product candidate we develop, will ultimately prove to be safe and effective, scalable or profitable. Moreover, public perception of drug safety issues, including adoption of new therapeutics or novel approaches to treatment, may adversely influence the willingness of subjects to participate in clinical trials, or if approved, of physicians to prescribe novel treatments.

Our approach to the potential treatment of AD is based on a novel therapeutic approach, which exposes us to unforeseen risks.

There is no current scientific or general consensus on the causation of AD or method of action to treat AD. We have discovered and are developing ACU193, a humanized monoclonal antibody that selectively targets amyloid-beta oligomers, or AbOs, to treat AD. Our approach is based on research on AbOs, globular assemblies of the amyloid-beta, or Ab, peptide that are distinct from other forms of amyloid. AbOs have gained scientific acceptance as primary toxins involved in the initiation and propagation of AD pathology. Based on the results of our nonclinical studies to date, we believe ACU193 is different from current and prior clinical-stage anti-amyloid drugs and product candidates based on its selectivity for AbOs. We believe that this is a novel mechanism which has the potential to provide more clinically meaningful benefits, with a possible improved safety profile, as compared to approved therapies and product candidates in development and may potentially slow disease progression. However, we may ultimately discover that ACU193 does not possess properties required for therapeutic effectiveness. We have no evidence regarding the efficacy, safety or tolerability of ACU193 in humans. We may spend substantial funds attempting to develop ACU193 or other product candidates and never succeed in doing so.

The market for any products that we successfully develop, if any, will also depend on the cost of the product. We do not yet have sufficient information to reliably estimate what it would cost to commercially manufacture ACU193, and the actual cost to manufacture ACU193 or any drug we develop in the future could materially and adversely affect the commercial viability of the drug. We may also find that the manufacture of our product candidates is more difficult than anticipated, resulting in an inability to produce a sufficient amount of our product candidates for our clinical trials or, if approved, commercial supply. If we do not successfully develop ACU193 or any other drug we develop with drug product cannot be reliably and economically manufactured at scale, we will not become profitable, which would materially and adversely affect the value of our common stock.

Nonclinical and clinical drug development involves a lengthy, expensive and uncertain process. The results of nonclinical studies and early clinical trials are not always predictive of future results. ACU193 or any other product candidate that we advance into clinical trials may not achieve favorable results in later clinical trials, if any, or receive marketing approval.

The research and development of product candidates is extremely risky. Only a small percentage of product candidates that enter the development process ever receive marketing approval. Before obtaining marketing

approval from regulatory authorities for the sale of any product candidate, we must complete nonclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain.

The results of nonclinical studies and early clinical trials are not necessarily predictive of future results and ACU193, or any other product candidate that we may develop, may not be further developed or have favorable results in later studies or trials. Clinical trial failure may result from a multitude of factors including, but not limited to, flaws in study design, dose selection, placebo effect, patient enrollment criteria and failure to demonstrate favorable safety or efficacy traits. As such, failure in clinical trials can occur at any stage of testing. A number of companies in the pharmaceutical industry have suffered setbacks in the advancement of their product candidates into later-stage clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding results in earlier nonclinical studies or clinical trials. We intend to enroll 62 patients with early AD in our Phase 1 clinical trial of ACU193. Even if the results of our Phase 1 clinical trial are positive, it may not be predictive of the results of outcomes in our later-stage clinical trials. The results of clinical trials in one set of patients or disease indications may not be predictive of those obtained in another. In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial participants. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or unacceptable safety issues, notwithstanding promising results in earlier trials. This is particularly true in AD, where failure rates historically are higher than in most other disease areas.

In the event of negative or inconclusive results, we may decide, or regulatory authorities may require us, to conduct additional clinical trials or nonclinical studies. In addition, data obtained from clinical trials and nonclinical studies is susceptible to varying interpretations, and regulatory authorities may not interpret our data as favorably as we do, which may further delay, limit or prevent development efforts, clinical trials or marketing approval. Furthermore, as more competing product candidates within a particular class of drugs proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change.

If we are unable to complete nonclinical studies or clinical trials of ACU193 or future product candidates, due to safety concerns or otherwise, or if the results of these trials are not sufficient to convince regulatory authorities of their safety or efficacy, we will not be able to obtain marketing approval for commercialization on a timely basis or at all. Even if we are able to obtain marketing approval for ACU193 or any future product candidates, those approvals may be for indications or dose levels that deviate from our desired approach or may contain other limitations that would adversely affect our ability to generate revenue from sales of those product candidates. Moreover, if we are not able to differentiate our product candidate against other approved product candidates within the same class of drugs, or if any of the other circumstances described above occur, our business would be harmed and our ability to generate revenue from that class of drugs would be severely impaired.

Clinical failure can occur at any stage of clinical development and we have never completed a clinical trial or submitted a biologics license application, or BLA, or marketing authorization application, or MAA.

We are early in our development efforts for ACU193, and will need to successfully complete our ongoing and planned clinical trials, including pivotal clinical trials, in order to obtain FDA approval to market ACU193 or any other product candidate we seek to develop. Carrying out clinical trials and the submission of a successful BLA is a complicated process. Although members of the Acumen team have significant experience in clinical development of drugs through regulatory approval, as an organization, Acumen has just begun conducting its first clinical trial, has no experience in conducting any clinical trials, has limited experience in preparing regulatory submissions and has not previously submitted a BLA for any product candidate.

In addition, we have had limited interactions with the FDA and cannot be certain how many clinical trials of ACU193 will be required or how such trials should be designed. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to BLA submission and approval of ACU193 or any other product candidate. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials, could prevent us from or delay us in commercializing ACU193 or any future product candidates we may develop, and failure to successfully complete any of these activities in a timely manner could have a material adverse impact on our business and financial performance.

We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize our product candidates, including:

- regulatory authorities, Institutional Review Boards, or IRBs, or Ethics Committees, or ECs, may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site or we may fail to reach a consensus with regulatory authorities on trial design; for example, our initial submission of the IND for ACU193 was placed on clinical hold by the FDA until we were able to address the FDA's initial concerns regarding potential off-target binding of ACU193 with an additional nonclinical tissue cross reactivity study, after which the FDA permitted us to initiate the Phase 1 clinical trial of ACU193 in April 2021;

- regulatory authorities in jurisdictions in which we seek to conduct clinical trials may differ from each other on our trial design, and it may be difficult or impossible to satisfy all such authorities with one approach;

- we may have delays in reaching or fail to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different contract research organizations, or CROs, and trial sites;

- we may be unable to add or be delayed in adding a sufficient number of clinical trial sites and obtaining IRB or independent EC approval at each clinical trial site;

- clinical trials of our product candidates may fail to show safety or efficacy or otherwise produce negative or inconclusive results, and we may decide, or regulatory authorities may require us, to conduct additional clinical trials or abandon drug development programs;

- the number of patients required for clinical trials of our product candidates may be larger than we anticipate;

- enrollment in our clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;

- difficulties in having subjects complete a clinical trial or returning for post-treatment follow-up;

- changes to clinical trial protocols;

- our third-party contractors, including clinical investigators, contract manufacturers and vendors may fail to comply with applicable regulatory requirements, lose their licenses or permits, or otherwise fail, or lose the ability to, meet their contractual obligations to us in a timely manner, or at all;

- we might have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the participants are being exposed to unacceptable health risks;

- regulatory authorities or IRBs may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements, a finding that our product candidates have undesirable side effects or other unexpected characteristics, or that the participants are being exposed to unacceptable health risks;

- the cost of clinical trials of our product candidates may be greater than we anticipate, and we may lack adequate funding to continue one or more clinical trials;

- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate;

- clinical trial sites may deviate from clinical trial protocol or drop out of a clinical trial; and

- occurrence of serious adverse events in trials of the same class of agents conducted by other companies.

Adverse side effects, properties or other safety risks associated with ACU193 or any future product candidates could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon further development, limit the commercial profile of an approved label or result in significant negative consequences following marketing approval, if any.

As is the case with pharmaceuticals generally, it is possible that there may be side effects and adverse events associated with the use of ACU193 or any future product candidates we may develop. Results of our Phase 1 trial of ACU193, or future clinical trials, could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics as the clinical trials progress to greater exposures and a larger number of patients. Undesirable side effects caused by, or unexpected or unacceptable characteristics associated with, ACU193 or any future product candidates we may develop, could result in the delay, suspension or termination of clinical trials by us, the FDA or other regulatory authorities, or IRBs for a number of reasons. We may also elect to limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which may limit the commercial expectations for such product candidate if approved. If we elect or are required to further delay, suspend or terminate any clinical trial of any product candidates we may develop, the commercial prospects of such product candidates will be harmed and our ability to generate drug revenues from any such product candidates will be delayed or eliminated.

It is possible that, as we test ACU193 in our Phase 1 trial or future trials, or as the use of ACU193 becomes more widespread if it receives regulatory approval, we may identify additional adverse events that were not identified or not considered significant in our earlier trials. If such side effects become later known in development or upon approval, if any, such findings may harm our business, financial condition, results of operations and prospects significantly. If we or others later identify undesirable side effects, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw, suspend or limit approval of ACU193 or any future product candidates;

- we may be required to recall a drug or change the way such drug is administered to patients;

- regulatory authorities may require additional warnings or statements in the labeling, such as a boxed warning or a contraindication or issue safety alerts, press releases or other communications containing warnings or other safety information about the product candidate, for example, field alerts to physicians and pharmacies;

- regulatory authorities may require us to implement a REMS to ensure that the benefits of the drug outweigh its risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools;
- we may be required to change the way a drug is distributed or administered, conduct additional clinical trials or be required to conduct additional post-marketing studies or surveillance;
- we may be subject to regulatory investigations and government enforcement actions;
- we may decide to remove such product candidates from the market;
- we could be sued and held liable for harm caused to patients;
- sales of the drug may decrease significantly or ACU193 or any future drug could become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of ACU193 or any future product candidates, if approved, and could significantly harm our business, financial condition, results of operations and prospects.

We may experience delays or difficulties in the enrollment and retention of patients in clinical trials, which could delay or prevent our receipt of necessary regulatory approvals.

Successful and timely completion of clinical trials will require that we enroll a sufficient number of patients. Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors, including the size and nature of the patient population and competition for patients eligible for our clinical trials with competitors which may have ongoing clinical trials for product candidates that are under development to treat the same indications as one or more of our product candidates or approved products for the conditions for which we are developing our product candidates.

Trials may be subject to delays as a result of patient enrollment taking longer than anticipated or patient withdrawal. We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA, EMA or foreign regulatory authorities. We cannot predict how successful we will be at enrolling subjects in future clinical trials. Subject enrollment is affected by other factors including:

- the severity and difficulty of diagnosing the disease under investigation;
- the eligibility and exclusion criteria for the trial in question;
- the size of the patient population and process for identifying patients;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the design of the trial protocol;
- the perceived risks and benefits of the product candidate in the trial, including relating to cell therapy approaches;

- the availability of competing commercially available therapies and other competing therapeutic candidates' clinical trials for the disease or condition under investigation;
- the willingness of patients to be enrolled in our clinical trials;
- the efforts to facilitate timely enrollment in clinical trials;
- potential disruptions caused by the COVID-19 pandemic, including difficulties in initiating clinical sites, enrolling and retaining participants, diversion of healthcare resources away from clinical trials, travel or quarantine policies that may be implemented, and other factors;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in these clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing. Furthermore, we expect to rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and we will have limited influence over their performance.

Furthermore, even if we are able to enroll a sufficient number of patients for our clinical trials, we may have difficulty maintaining enrollment of such patients in our clinical trials.

Interim, "top-line" and preliminary results from our clinical trials that we announce or publish from time to time may change as more data become available and is subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim, top-line or preliminary results from our clinical trials. Interim results from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary or top-line results also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are reported. Differences between preliminary, top-line or interim data and final data could significantly harm our business prospects and may cause the trading price of our common stock to fluctuate significantly. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the top-line results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated.

Further, others, including regulatory agencies may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular development program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure. Any information we determine not to disclose may ultimately be deemed meaningful by you or others with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product

candidate or our business. If the interim, top-line or preliminary data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, product candidates may be harmed, which could significantly harm our business prospects.

We cannot be certain that ACU193 or any of our future product candidates will receive regulatory approval, and without regulatory approval we will not be able to market our product candidates.

We currently have no product candidates approved for sale and we cannot guarantee that we will ever have marketable product candidates. ACU193 is our sole product candidate designed for the treatment of AD. Our ability to generate revenue related to sales of ACU193, if ever, will depend on the successful development and regulatory approval of ACU193 for the treatment of AD and, potentially, other indications.

The development of a product candidate and its approval and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, distribution, import and export are subject to extensive regulation by the FDA, the EMA and regulatory authorities in other countries, with regulations differing from country to country. We are not permitted to market our product candidates in the United States, Europe or other countries until we receive approval of a BLA from the FDA or MAA from the EMA, respectively. We have not submitted any marketing applications for ACU193.

BLAs and MAAs must include extensive nonclinical and clinical data and supporting information to establish the product candidate's safety and effectiveness for each desired indication. BLAs and MAAs must also include significant information regarding the chemistry, manufacturing and controls for the drug. Obtaining approval of a BLA or a MAA is a lengthy, expensive and uncertain process, and we may not be successful in obtaining approval. The FDA and the EMA review processes can take years to complete and approval is never guaranteed. If we submit a BLA to the FDA, the FDA must decide whether to accept or reject the submission for filing. We cannot be certain that any submissions will be accepted for filing and review by the FDA. Regulators of other jurisdictions, such as the EMA, have their own procedures for approval of product candidates.

Even if a drug is approved, the FDA or the EMA, as the case may be, may limit the indications for which the drug may be marketed, require extensive warnings on the drug labeling or require expensive and time-consuming clinical trials or reporting as conditions of approval. Regulatory authorities in countries outside of the United States and Europe also have requirements for approval of product candidates with which we must comply prior with marketing in those countries. Obtaining regulatory approval for marketing of a product candidate in one country does not ensure that we will be able to obtain regulatory approval in any other country. In addition, delays in approvals or rejections of marketing applications in the United States, Europe or other countries may be based upon many factors, including regulatory requests for additional analyses, reports, data, nonclinical studies and clinical trials, regulatory questions regarding different interpretations of data and results, changes in regulatory policy during the period of drug development and the emergence of new information regarding ACU193 or other product candidates we may develop in the future. Also, regulatory approval for any of our product candidates may be withdrawn.

We initiated our Phase 1 trial in patients with AD in the second quarter of 2021. Before we submit a BLA to the FDA or a MAA to the EMA for ACU193 for the treatment of patients with AD, we will be required to successfully complete our Phase 1 clinical trial and at least one additional late-stage clinical trial. The FDA generally requires two pivotal clinical trials to support approval. In addition, we must scale up manufacturing and complete other standard nonclinical and clinical studies. We cannot predict whether our current or future trials will be successful or whether regulators will agree with our conclusions regarding the nonclinical studies and the clinical trials we conduct.

We may in the future conduct clinical trials for our product candidates outside the United States, and the FDA, EMA and other foreign regulatory authorities may not accept data from such trials.

We may in the future choose to conduct one or more of our clinical trials outside the United States, including in Europe. The acceptance of study data from clinical trials conducted outside the United States or another jurisdiction by the FDA, EMA or applicable foreign regulatory authorities may be subject to certain conditions or may not be accepted at all. In cases where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the United States population and United States medical practice; and (ii) the trials were performed by clinical investigators of recognized competence and pursuant to current good clinical practice, or cGCP, regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory bodies have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. There can be no assurance that the FDA, EMA or any other foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction. If the FDA, EMA or any applicable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which would be costly and time-consuming and delay aspects of our business plan, and which may result in our product candidates not receiving approval or clearance for commercialization in the applicable jurisdiction.

We may not be successful in our efforts to build a pipeline of additional product candidates.

Our sole product candidate is ACU193. We may not be able to identify and successfully develop new product candidates in addition to ACU193. Even if we are successful in building our product pipeline, the potential product candidates that we identify may not be suitable for clinical development or, if deemed suitable for clinical development, successful in any clinical trials. For example, product candidates may be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be successfully developed, much less receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize product candidates, we will not be able to obtain product revenue in future periods, which would result in significant harm to our financial position and adversely affect our stock price.

If we do not achieve our projected development goals in the time frames we announce and expect, the commercialization of our products may be delayed.

From time to time, we may estimate the timing of the accomplishment of various scientific, clinical, regulatory, manufacturing and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of nonclinical studies and clinical trials and the submission of regulatory filings, including BLA submissions. From time to time, we may publicly announce the expected timing of some of these milestones. All of these milestones are, and will be, based on a variety of assumptions. The actual timing of these milestones can vary significantly compared to our estimates, in some cases for reasons beyond our control. We may experience numerous unforeseen events during, or as a result of, any future clinical trials that we conduct that could delay or prevent our ability to receive marketing approval or commercialize our product candidates.

Our business and operations may be adversely affected by the evolving and ongoing COVID-19 global pandemic.

Our business and operations may be adversely affected by the effects of the recent and evolving COVID-19 virus, which was declared a global pandemic by the World Health Organization in March 2020. The COVID-19 pandemic has resulted in travel and other restrictions in order to reduce the spread of the disease, including public health directives and orders in the United States and the European Union that, among other things and for various periods of time, directed individuals to shelter at their places of residence, directed businesses and

governmental agencies to cease non-essential operations at physical locations, prohibited certain non-essential gatherings and events and ordered cessation of non-essential travel. Future remote work policies and similar government orders or other restrictions on the conduct of business operations related to the COVID-19 pandemic may negatively impact productivity and may disrupt our ongoing research and development activities and our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. Further, such orders also may impact the availability or cost of materials, which would disrupt our supply chain and manufacturing efforts and could affect our ability to conduct ongoing and planned clinical trials and preparatory activities.

Although we do not believe our operations have been materially impacted by the COVID-19 pandemic to date, we may experience related disruptions in the future that could severely impact our clinical trials, including:

- interruptions in our ability to obtain drug supply for our clinical trials;
- interruptions in our ability to obtain clinical test kits for our clinical trials;
- delays in receiving authorizations from regulatory authorities to initiate our planned clinical trials;
- delays, difficulties or a suspension in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- delays or difficulties in enrolling and retaining patients in our clinical trials;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- changes in local regulations as part of a response to the COVID-19 outbreak that may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs or to discontinue the clinical trials altogether;
- interruption of key clinical trial activities, such as clinical trial site monitoring, and the ability or willingness of subjects to travel to trial sites due to limitations on travel imposed or recommended by federal or state governments, employers and others;
- risk that participants enrolled in our clinical trials will contract COVID-19 while the trial is ongoing, which could impact the results of the clinical trial, including by increasing the number of observed adverse events;
- limitations in employee resources that would otherwise be focused on the conduct of our clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- interruptions of, or delays in receiving, supplies of our product candidates from our contract manufacturing organizations, or CMOs, due to staffing shortages, production slowdowns or stoppages and disruptions in delivery systems;
- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees;

- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue such clinical trials altogether; and
- refusal of the FDA to accept data from clinical trials in these affected geographies.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, the continued widespread pandemic could result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The global COVID-19 pandemic continues to rapidly evolve. The extent to which the COVID-19 pandemic impacts our business and operations, including our clinical development and regulatory efforts, will depend on future developments that are highly uncertain and cannot be predicted with confidence at the time of this prospectus, such as the ultimate geographic spread of the disease, the duration of the outbreak, the duration and effect of business disruptions and the short-term effects and ultimate effectiveness of the travel restrictions, quarantines, social distancing requirements and business closures in the United States and other countries to contain and treat the disease. Accordingly, we do not yet know the full extent of potential delays or impacts on our business, our clinical and regulatory activities, healthcare systems or the global economy as a whole. However, these impacts could adversely affect our business, financial condition, results of operations and growth prospects.

In addition, to the extent the ongoing COVID-19 pandemic adversely affects our business and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described in this “Risk Factors” section.

We may develop ACU193 and future product candidates for use in combination with other therapies, which could expose us to additional regulatory risks.

We may develop ACU193 and future product candidates for use in combination with one or more other approved therapies for AD. Even if any product candidate we develop were to receive marketing approval or be commercialized for use in combination with other existing therapies, we would continue to be subject to the risk that the FDA, EMA or comparable foreign regulatory authorities could revoke approval of the therapy used in combination with our product candidate or that safety, efficacy, manufacturing or supply issues could arise with these existing therapies. This could result in our own products being removed from the market or being less successful commercially.

Further, we will not be able to market and sell any product candidate we develop in combination with an unapproved AD therapy for a combination indication if that unapproved therapy does not ultimately obtain marketing approval either alone or in combination with our product. In addition, unapproved AD therapies face the same risks described with respect to our product candidates currently in development and clinical trials, including the potential for serious adverse effects, delay in their clinical trials and lack of FDA approval.

Changes in methods of product candidate manufacturing or formulation may result in additional costs or delay.

As product candidates proceed through nonclinical studies to late-stage clinical trials towards potential approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and product characteristics. For example, we recently changed the storage conditions for future lots of ACU193 drug product, which required a change in contract manufacturer and submission of stability data to FDA in an IND amendment.

The change in contract manufacturer IND amendment was filed with the FDA on April 8, 2021. The FDA has confirmed there is no plan for a 30 day review or wait at the agency.

Such changes carry the risk that they will not achieve our intended objectives. Any such changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the materials manufactured using altered processes. Such changes may also require additional testing, FDA notification approval. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates and jeopardize our ability to commence sales and generate revenue. In addition, we may be required to make significant changes to our upstream and downstream processes across our pipeline, which could delay the development of our future product candidates.

Risks Related to the Commercialization of our Product Candidates

Even if ACU193 or any other product candidate we develop receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success.

If ACU193 or any other product candidate we develop receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant revenue and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the clinical indications for which our product candidates are licensed;
- the efficacy, safety and potential advantages compared to alternative treatments;
- our ability to demonstrate the advantages of our product candidates over other medicines;
- our ability to offer our products for sale at competitive prices;
- the convenience and ease of administration compared to alternative treatments;
- product labeling or product insert requirements of the FDA, EMA or other foreign regulatory authorities, including any limitations or warnings contained in a product's approved labeling, including any black box warning or REMS;
- the willingness of the target patient population to try new treatments and of physicians to prescribe these treatments;
- our ability to commercialize the product either in collaboration with a third party or on our own;
- the timing of market introduction of our product candidates as well as competitive products;
- the strength of marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement for ACU193 and any other product candidates, once approved;

- the prevalence and severity of any side effects; and
- any restrictions on the use of our products together with other medications.

If we are unable to enter into a commercial collaboration or, alternatively, establish internal sales, marketing and distribution capabilities, for ACU193 or any other product candidate that may receive regulatory approval, we may not be successful in commercializing those product candidates if and when they are approved.

We do not have sales or marketing infrastructure. To achieve commercial success for ACU193 or any other product candidate for which we may obtain marketing approval, we will either need to establish a commercial collaboration with a pharmaceutical company that has a sales and marketing organization or we will be required to develop these capabilities internally. There are risks and limitations associated with entering into a commercial collaboration. For example, we may not be successful in entering into arrangements with third parties to sell, market and distribute our product candidates or may be unable to do so on terms that are favorable to us. Even if we are able to enter into a collaboration, our revenue and profitability, if any, are likely to be significantly lower than if we were able to successfully commercialize a product ourselves. In addition, we likely would have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively.

At the same time, there are significant risks associated with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This would be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to market our products on our own include:

- our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians in order to educate physicians about our product candidates, once approved;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we do not establish sales, marketing and distribution capabilities successfully, either in collaboration with third parties or on our own, we will not be successful in commercializing our product candidates.

The affected populations for ACU193 or any other product candidate we may develop may be smaller than we or third parties currently project, which may affect the addressable markets for our product candidates.

Our projections of the number of people who have AD, as well as the subset of people with AD who have the potential to benefit from treatment with ACU193, are estimates based on our knowledge and understanding of the disease. These estimates may prove to be incorrect and new studies may further reduce the estimated incidence or prevalence of the disease or narrow the universe of patients who would be understood to potentially benefit for treatment with ACU193, if approved. The number of patients in the United States, the European Union and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our product

candidates or patients may become increasingly difficult to identify and access, all of which would adversely affect our business, financial condition, results of operations and prospects. Further, even if we obtain approval for ACU193, the FDA or other regulators may limit their approved indications to more narrow uses or subpopulations within the populations for which we are targeting development of ACU193.

The total addressable market opportunity for our product candidates will ultimately depend upon a number of factors including the diagnosis and treatment criteria included in the final label, if approved for sale in specified indications, acceptance by the medical community, patient access and product pricing and reimbursement. Incidence and prevalence estimates are frequently based on information and assumptions that are not exact and may not be appropriate, and the methodology is forward-looking and speculative.

The estimated incidence and prevalence ranges included herein have been derived from data from multiple sources, including scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Accordingly, the incidence and prevalence estimates included in this prospectus should be viewed with caution. Further, the data and statistical information used in this prospectus, including estimates derived from them, may differ from information and estimates made by our competitors or from current or future studies conducted by independent sources.

Off-label use or misuse of our products may harm our reputation in the marketplace, result in injuries that lead to costly product liability suits, and subject us to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with any product.

If ACU193 or any other product candidate we develop is approved by the FDA, we may only promote or market our product candidate for its specifically approved indications and consistent with its approved labeling. We or any third party collaborator responsible for commercialization of our products will train the marketing and sales forces responsible for our products against promoting them for uses outside of their approved indications for use, known as “off-label uses.” However, neither we, nor any future commercial partner of ours will be able to prevent a physician from using our products off-label, when in the physician’s independent professional medical judgment he or she deems it appropriate. Furthermore, the use of our products for indications other than those approved by the FDA may not effectively treat such conditions. Any such off-label use of our product candidates could harm our reputation in the marketplace among physicians and patients. There may also be an increased risk of injury to patients if physicians attempt to use our products for these uses for which they are not approved, which could lead to product liability suits that that might require significant financial and management resources and that could harm our reputation.

Advertising and promotion of any product candidate that obtains approval in the United States will be heavily scrutinized by the FDA, the U.S. Federal Trade Commission, the Department of Justice, or DOJ, the Office of Inspector General of the U.S. Department of Health and Human Services, or HHS, state attorneys general, members of the U.S. Congress and the public. Additionally, advertising and promotion of any product candidate that obtains approval outside of the United States will be heavily scrutinized by comparable foreign entities and stakeholders. Violations, including actual or alleged promotion of our products for unapproved or off-label uses, are subject to enforcement or warning letters, mandates to issue corrective information to healthcare practitioners, inquiries, investigations, injunctions and civil and criminal sanctions by the FDA, DOJ or comparable foreign bodies. The federal government has levied large civil and criminal fines against companies for alleged improper promotion of off-label use and as enjoined several companies from engaging in an off-label promotion.

We face significant competition in an environment of rapid technological and scientific change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer or more effective than ours.

The development and commercialization of new drugs is highly competitive. Moreover, the AD field is characterized by strong competition and a strong emphasis on intellectual property. We may face competition

with respect to any product candidates that we seek to develop or commercialize in the future from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

If approved, ACU193 will compete with therapies currently approved for the treatment of AD, which have primarily been developed to treat the symptoms of AD rather than the underlying cause of the disease, such as memantine and cholinesterase inhibitors. ACU193 may also compete with one or more potentially disease-modifying therapeutics currently in development that target Ab or amyloid plaques, the most advanced of which is Biogen Inc.'s aducanumab, which is pending regulatory approval in the United States, Europe and Japan. Other companies known to be developing therapies with Ab/amyloid plaque-related targets include Alzheon, Inc., Alzinova AB, Chugai Pharmaceutical Co. Ltd., Cognition Therapeutics, Inc., Eisai Co., Ltd., Eli Lilly and Company, Grifols, S.A., KalGene Pharmaceuticals, Inc., Neurimmune AG, Novartis AG, ProMIS Neurosciences, Inc., Prothena Biosciences, Inc., Roche Holding AG (including Genentech, its wholly owned subsidiary) and Wren Therapeutics, Inc.. Additionally, ACU193, if approved, may also compete with other potential therapies intended to address underlying causes of AD that are being developed by several companies, including AbbVie Inc., AC Immune SA, Alector, Inc., Anavex Life Sciences Corp., Annovis Bio, Inc., Athira Pharma, Inc., Biohaven Pharmaceuticals, Inc., Cassava Sciences, Inc., Cortexyme, Inc., Denali Therapeutics, Inc., Johnson & Johnson (including Janssen, its wholly-owned subsidiary) and Takeda Pharmaceutical Co. Ltd.

Many of our current or potential competitors, either alone or with their strategic partners, have significantly greater financial resources and expertise in research and development, manufacturing, nonclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved product candidates than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize product candidates that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any product candidates that we may develop. Furthermore, currently approved product candidates could be discovered to have application for treatment of AD, which could give such product candidates significant regulatory and market timing advantages over any of our product candidates. Our competitors also may obtain FDA, EMA or other regulatory approval for their product candidates more rapidly than we may obtain approval for ours from the FDA, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, product candidates or technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we may develop against competitors.

If our competitors market product candidates that are more effective, safer or less expensive than our product candidates, if approved, or that reach the market sooner than our product candidates, we may not achieve commercial success. In addition, the pharmaceutical industry is characterized by rapid technological change. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Technological advances or product candidates developed by our competitors may render our technologies or product candidates obsolete, less competitive or not economical.

Any product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.

If we are successful in achieving regulatory approval to commercialize any biologic product candidate that we develop, it may face competition from biosimilar products. In the United States, ACU193 is, and we expect that

any other product candidate we may seek to develop likely will be, regulated by the FDA as a biologic product subject to approval under the BLA pathway. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the ACA, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or the BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four (4) years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed by the FDA. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing the sponsor's own nonclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of their product.

There is a risk that any of our product candidates approved as a biological product under a BLA would not qualify for the 12-year period of exclusivity or that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products will depend on a number of marketplace and regulatory factors that are still developing. If competitors are able to obtain marketing approval for biosimilars referencing our candidates, if approved, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and potential adverse consequences.

The success of our product candidates will depend significantly on coverage and adequate reimbursement or the willingness of patients to pay for these therapies.

We believe our success depends on obtaining and maintaining coverage and adequate reimbursement from third- party payors for ACU193 and any other product candidate we successfully develop, and the extent to which patients will be willing to pay out-of-pocket for such products, in the absence of reimbursement for all or part of the cost. In the United States and in other countries, patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. The availability of coverage and adequacy of reimbursement for our products by third-party payors, including government health care programs (e.g., Medicare, Medicaid, TRICARE), managed care providers, private health insurers, health maintenance organizations, and other organizations is essential for most patients to be able to afford medical services and pharmaceutical products such as our product candidates. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a payor-by-payor basis. One payor's determination to provide coverage for a drug product does not assure that other payors will also provide coverage, and adequate reimbursement. The principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the HHS. CMS decides whether and to what extent products will be covered and reimbursed under Medicare and private payors tend to follow CMS to a substantial degree.

Third-party payors determine which products and procedures they will cover and establish reimbursement levels. Even if a third-party payor covers a particular product or procedure, the resulting reimbursement payment rates may not be adequate. Patients who are treated in-office for a medical condition generally rely on third-party payors to reimburse all or part of the costs associated with the procedure, including costs associated with products used during the procedure, and may be unwilling to undergo such procedures in the absence of such coverage and adequate reimbursement. Physicians may be unlikely to offer procedures for such treatment if they are not covered by insurance and may be unlikely to purchase and use our product candidates, if approved, for our stated indications unless coverage is provided and reimbursement is adequate. In addition, for products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs.

Reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that a procedure is safe, effective and medically necessary; appropriate for the specific patient; cost-effective; supported by peer-reviewed medical journals; included in clinical practice guidelines; and neither cosmetic, experimental nor investigational. Further, increasing efforts by third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. In order to secure coverage and reimbursement for any product that might be approved for sale, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain FDA or comparable regulatory approvals. Additionally, we may also need to provide discounts to purchasers, private health plans or government healthcare programs. Our product candidates may nonetheless not be considered medically necessary or cost-effective. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit. We expect to experience pricing pressures from third-party payors in connection with the potential sale of any of our product candidates. Decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product and also have a material adverse effect on sales.

Foreign governments also have their own healthcare reimbursement systems, which vary significantly by country and region, and we cannot be sure that coverage and adequate reimbursement will be made available with respect to the treatments in which our products are used under any foreign reimbursement system.

There can be no assurance that ACU193 or any other product candidate, if approved for sale in the United States or in other countries, will be considered medically reasonable and necessary, that it will be considered cost-effective by third-party payors, that coverage or an adequate level of reimbursement will be available or that reimbursement policies and practices in the United States and in foreign countries where our products are sold will not adversely affect our ability to sell our product candidates profitably, if they are approved for sale.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or drugs caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or drugs that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards paid to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any products that we may develop.

Although we maintain product liability insurance coverage, such insurance may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our product candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

We are subject to a variety of privacy and data security laws, and our failure to comply with them could harm our business.

We maintain a large quantity of sensitive information, including confidential business and personal information in connection with the conduct of our clinical trials and related to our employees, and we are subject to laws and regulations governing the privacy and security of such information. In the United States, there are numerous federal and state privacy and data security laws and regulations governing the collection, use, disclosure and protection of personal information, including federal and state health information privacy laws, federal and state security breach notification laws, and federal and state consumer protection laws. The legislative and regulatory landscape for privacy and data protection continues to evolve, and there has been an increasing focus on privacy and data protection issues, which may affect our business and is expected to increase our compliance costs and exposure to liability. In the United States, numerous federal and state laws and regulations could apply to our operations or the operations of our partners, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws and regulations (e.g. Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure and protection of health-related and other personal information. In addition, we may obtain health information from third parties (including research institutions from which we obtain clinical trial data) that are subject to privacy and security requirements under the Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and regulations promulgated thereunder. Depending on the facts and circumstances, we could be subject to significant penalties if we obtain, use or disclose individually identifiable health information in a manner that is not authorized or permitted by HIPAA.

In Europe, the General Data Protection Regulation, or GDPR, took effect in May 2018. The GDPR governs the collection, use, disclosure, transfer or other processing of personal data of individuals within the European Economic Area, or EEA, including clinical trial data. Among other things, the GDPR imposes requirements regarding the security of personal data and notification of data processing obligations to the competent national data processing authorities, requires having lawful bases on which personal data can be processed, requires changes to informed consent practices, and more detailed notices for clinical trial subjects and investigators. In addition, the GDPR increases the scrutiny of transfers of personal data from the EEA to the United States and other jurisdictions that the European Commission does not recognize as having “adequate” data protection laws. In July 2020, the Court of Justice of the European Union limited how organizations could lawfully transfer personal data from the EEA to the United States by invalidating the EU-U.S. Privacy Shield and imposing further restrictions on use of the standard contractual clauses, which could increase our costs and our ability to efficiently process personal data from the EEA. The GDPR imposes substantial fines for breaches and violations (up to the greater of €20 million or four percent (4%) of our consolidated annual worldwide gross revenue) and confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. Relatedly, following the United Kingdom’s, or U.K., withdrawal from the EEA and the European Union, and the expiry of the transition period, which ended on January 1, 2021, companies have to comply with both the GDPR and the GDPR as incorporated into U.K. national law, the latter regime having the ability to separately fine up to the greater of £17.5 million or four percent (4%) of global turnover. On January 1, 2021, the U.K. became a third country for the purposes of the GDPR.

The relationship between the U.K. and the European Union in relation to certain aspects of data protection law remains unclear. For example, it is unclear how data can lawfully be transferred between each jurisdiction, which exposes us to further compliance risk. Pursuant to the EU-U.K. Trade and Cooperation Agreement of

December 24, 2020, transfers of personal data from the European Union to the U.K. may continue to take place without a need for additional safeguards during a further transition period, to expire on (1) the date on which an adequacy decision with respect to the U.K. is adopted by the EU Commission; or (2) the expiry of four (4) months, which shall be extended by a further two (2) months unless either the European Union or the U.K. objects. It remains unclear whether the EU Commission will adopt an adequacy decision with respect to the U.K. In the absence of such decision after the expiry of the additional transition period, we may need to put in place additional safeguards for transfers of personal data from the European Union to the U.K., such as standard contractual clauses approved by the EU Commission.

Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations. Furthermore, the laws are not consistent, and compliance in the event of a widespread data breach is costly. In addition, states are constantly adopting new laws or amending existing laws, requiring attention to frequently changing regulatory requirements. For example, California enacted the California Consumer Privacy Act, or CCPA, which took effect on January 1, 2020, became enforceable by the California Attorney General on July 1, 2020, and has been dubbed the first "GDPR-like" law in the United States. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, receive detailed information about how their personal information is used by requiring covered companies to provide new disclosures to California consumers (as that term is broadly defined) and provide such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Further, the California Privacy Rights Act, or CPRA, recently passed in California. The CPRA will impose additional data protection obligations on companies doing business in California, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Although the CCPA currently exempts certain health-related information, including clinical trial data, the CCPA and the CPRA may increase our compliance costs and potential liability. Similar laws have been proposed in other states and at the federal level, and if passed, such laws may have potentially conflicting requirements that would make compliance challenging.

If we or any contract manufacturers and suppliers we engage fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could seriously harm our business.

We and any contract manufacturers and suppliers we engage are subject to numerous federal, state and local environmental, health, and safety laws, regulations and permitting requirements, including those governing laboratory procedures; the generation, handling, use, storage, treatment and disposal of hazardous and regulated materials and wastes; the emission and discharge of hazardous materials into the ground, air and water; and employee health and safety. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. Under certain environmental laws, we could be held responsible for costs relating to any contamination at our current or past facilities and at third-party facilities. We also could incur significant costs associated with civil or criminal fines and penalties.

Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our research, product development and manufacturing efforts. In

addition, we cannot entirely eliminate the risk of accidental injury or contamination from these materials or wastes. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty, and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended, which could seriously harm our business.

Risks Related to Our Dependence on Third Parties

We currently rely on CMOs to supply components of and manufacture ACU193. The loss of any of these CMOs or the failure of any of them to meet their obligations to us could affect our ability to develop ACU193 in a timely manner.

We do not own or operate manufacturing facilities and rely on a limited number of CMOs to manufacture our product candidates. We have entered into agreements with third-party CMOs to manufacture ACU193 and supply the Phase 1 clinical trial material, in compliance with applicable regulatory and quality standards. We intend to continue to rely on third-party CMOs to manufacture our clinical supply for the foreseeable future. Any replacement of a third-party CMO could require significant effort and expertise because there may be a limited number of qualified replacements. Any delays in obtaining adequate clinical supply that meets the necessary quality standards may delay our development or commercialization.

Our reliance on CMOs for manufacturing activities will reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations. Under certain circumstances, these CMOs may be entitled to terminate their engagements with us. If a CMO terminates its engagement with us, or does not successfully carry out its contractual duties, meet expected deadlines or manufacture ACU193 or any other product candidate that we develop in accordance with regulatory requirements, or if there are disagreements between us and a CMO, we may not be able to complete, or may be delayed in completing, the nonclinical studies required to support clinical trials required for approval of ACU193 or any other product candidate. In such instance, we may need to enter into an appropriate replacement third-party relationship, which may not be readily available or available on acceptable terms, which would cause additional delay or increased expense prior to the approval of ACU193 or any future product candidate and would thereby have a negative impact on our business, financial condition, results of operations and prospects.

We may rely on additional third parties to manufacture ingredients of our product candidates in the future and to perform quality testing. Reliance on CMOs and other third-party service providers entails risks to which we would not be subject if we manufactured the product candidates ourselves, including:

- reduced control for certain aspects of manufacturing activities;
- termination or nonrenewal of the applicable manufacturing and service agreements in a manner or at a time that is costly or damaging to us;
- the possible breach by our third-party manufacturers and service providers of our agreements with them;
- the failure of our third-party manufacturers and service providers to comply with applicable regulatory requirements;
- disruptions to the operations of our third-party manufacturers and service providers caused by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or service provider; and

- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

Any of these events could lead to clinical trial delays or failure to obtain regulatory approval, impact our ability to successfully commercialize any of our product candidates or otherwise harm our business, financial condition, results of operations, stock price and prospects. Some of these events could be the basis for FDA or other regulatory authority action, including injunction, recall, seizure or total or partial suspension of product manufacture.

We intend to rely on CROs and other third parties to conduct, supervise and monitor a significant portion of our research and nonclinical testing and clinical trials for our product candidates, and if those third parties do not successfully carry out their contractual duties, comply with regulatory requirements or otherwise perform satisfactorily, we may not be able to obtain regulatory approval or commercialize product candidates, or such approval or commercialization may be delayed, and our business may be substantially harmed.

We intend to engage CROs and other third parties to conduct our planned nonclinical studies or clinical trials, including our Phase 1 trial and future clinical trials of ACU193, and to monitor and manage data. We expect to continue to rely on third parties, including clinical data management organizations, medical institutions and clinical investigators, in the future. Any of these third parties may terminate their engagements with us, some in the event of an uncured material breach and some at any time for convenience. If any of our relationships with these third parties terminate, we may not be able to timely enter into arrangements with alternative third parties or to do so on commercially reasonable terms, if at all. Switching or adding CROs involves substantial cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we intend to carefully manage our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects. Further, the performance of our CROs and other third parties conducting our trials may also be interrupted by the ongoing COVID-19 pandemic, including due to travel or quarantine policies, heightened exposure of a CRO or clinical site or other vendor staff who are healthcare providers to COVID-19 or prioritization of resources toward the pandemic.

In addition, any third parties conducting our clinical trials will not be our employees, and except for remedies available to us under our agreements with such third parties, we cannot control whether or not they devote sufficient time and resources to our clinical programs. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. Consequently, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase substantially and our ability to generate revenue could be delayed significantly.

We rely on these parties for execution of our nonclinical studies and clinical trials and generally do not control their activities. Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with GCPs, which are standards for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. If we or any of our CROs or other third parties, including trial sites, fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, EMA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any

of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP conditions. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process, or may result in fines, adverse publicity and civil and criminal sanctions.

We also are required to register certain ongoing clinical trials and post the results of certain completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

In addition, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA. The FDA may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the trial. The FDA may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA and may ultimately lead to the denial of marketing approval for ACU193 or any other product candidate we develop.

We also expect to rely on other third parties to store and distribute product supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential revenue.

If any of our third-party manufacturers encounter difficulties in production of ACU193 or any future product candidate we develop, or fail to meet rigorously enforced regulatory standards, our ability to provide supply of our product candidates for clinical trials or, if approved, for commercial sale could be delayed or stopped, or we may be unable to maintain a commercially viable cost structure.

The processes involved in manufacturing ACU193 and any other product candidate we may develop are highly-regulated and subject to multiple risks. As product candidates are developed through nonclinical studies to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives, and any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials. When changes are made to the manufacturing process, we may be required to provide preclinical and clinical data showing the comparable identity, strength, quality, purity or potency of the products before and after such changes. If microbial, viral or other contaminations are discovered at the facilities of our third-party manufacturers, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business.

In order to conduct clinical trials of our product candidates, or supply commercial product candidates, if approved, we will need to manufacture them in both small and large quantities. We currently rely on third parties to manufacture ACU193 for clinical trial purposes, and our manufacturing partners will have to modify and scale-up the manufacturing process when we transition to commercialization of our product candidates. Our manufacturing partners may be unable to successfully modify or scale-up the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If our manufacturing partners are unable to successfully scale-up the manufacture of our product candidates in sufficient quality and quantity, the development, testing and clinical trials of that product candidate may be delayed or become infeasible, and regulatory approval or commercial launch of any resulting product may be delayed or not obtained, which could significantly harm our business. The same risks would apply to our internal manufacturing facilities, should we in the future decide to build internal manufacturing capacity. In addition, building internal manufacturing capacity would carry significant risks in terms of being

able to plan, design and execute on a complex project to build manufacturing facilities in a timely and cost-efficient manner.

In addition, the manufacturing process for any product candidates that we may develop is subject to FDA, EMA and foreign regulatory requirements, and continuous oversight, and we will need to contract with manufacturers who can meet all applicable FDA, EMA and foreign regulatory authority requirements, including complying cGMPs on an ongoing basis. If we or our third-party manufacturers are unable to reliably produce product candidates in accordance with the requirements of the FDA, EMA or other regulatory authorities, we may not obtain or maintain the approvals we need to commercialize such product candidates. Even if we obtain regulatory approval for any of our product candidates, there is no assurance that either we or our third party contract manufacturers will be able to manufacture the approved product in accordance with the requirements of the FDA, EMA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product, or to meet potential future demand. Any of these challenges could delay completion of clinical trials, require bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidate, impair commercialization efforts, increase our cost of goods and have an adverse effect on our business, financial condition, results of operations and growth prospects. Significant non-compliance could also result in the imposition of sanctions, including warning or untitled letters, fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation and our business.

We will likely seek collaborations with third parties for the development or commercialization of our product candidates. If those collaborations are not successful, we may not be able to capitalize on the market potential of those product candidates, including ACU193.

We will likely seek third-party collaborators for the commercialization of ACU193 and any of our future product candidates, in the United States and may enter into collaboration agreements for the development and commercialization of any of our product candidates outside the United States. In the United States, commercialization partners are likely to include large biotechnology or pharmaceutical companies. Our likely collaborators outside the United States would most likely include regional and national pharmaceutical companies and biotechnology companies. If we enter into such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenue from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our product candidates would pose the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of any product candidates that achieve regulatory approval or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;

- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;

- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;

- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or drugs, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;

- a collaborator with marketing and distribution rights to one or more of our product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such products;

- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;

- collaborators may not properly maintain or defend our or their intellectual property rights or may use our or their proprietary information in such a way as to invite litigation that could jeopardize or invalidate such intellectual property or proprietary information or expose us to potential litigation;

- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and

- collaborations may be terminated for the convenience of the collaborator and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If any future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program could be delayed, diminished or terminated.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for any collaboration will depend, among other things, upon our assessment of the collaborator’s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator’s evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA, EMA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate additional collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate revenue.

We may be exposed to a variety of international risks that could materially adversely affect our business.

We may enter into agreements with third parties for the development and commercialization of product candidates in international markets. International business relationships will subject us to additional risks that may materially adversely affect our ability to attain or sustain profitable operations, including:

- differing regulatory requirements for product approvals internationally;
- potentially reduced protection for intellectual property rights;
- potential third-party patent rights in countries outside of the United States;
- the potential for so-called “parallel importing,” which is what occurs when a local seller, faced with relatively high local prices, opts to import goods from another jurisdiction with relatively low prices, rather than buying them locally;
- pricing pressure and differing reimbursement regimes:
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability, particularly in non-U.S. economies and markets, including several countries in Europe;
- compliance with tax, employment, immigration and labor laws for employees traveling abroad;
- taxes in other countries;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geo-political actions, including war and terrorism, or natural disasters, including earthquakes, volcanoes, typhoons, pandemics, epidemics, floods, hurricanes and fires.

If we engage in acquisitions, we will incur a variety of costs and we may never realize the anticipated benefits of such acquisitions.

Although we currently have no plans to do so, we may attempt to acquire businesses, technologies or drug candidates that we believe are a strategic fit with our business. If we do undertake any acquisitions, the process

of integrating an acquired business, technology or drug candidates into our business may result in unforeseen operating difficulties and expenditures, including diversion of resources and management's attention from our core business. In addition, we may fail to retain key executives and employees of the companies we acquire, which may reduce the value of the acquisition or give rise to additional integration costs. Future acquisitions could result in additional issuances of equity securities that would dilute the ownership of existing stockholders. Future acquisitions could also result in the incurrence of debt, contingent liabilities or the amortization of expenses related to other intangible assets, any of which could adversely affect our operating results. In addition, we may fail to realize the anticipated benefits or synergies of any acquisition.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our product candidate, and other proprietary technologies we develop, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our product candidate, and other proprietary technologies if approved, may be adversely affected.

Our commercial success will depend in part on our ability to obtain and maintain a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidate, and other proprietary technologies we develop. If we are unable to obtain or maintain patent protection with respect to our product candidate, and other proprietary technologies we may develop, our business, financial condition, results of operations, and prospects could be materially harmed.

The patent position of biotechnology and pharmaceutical companies is highly uncertain and involves complex legal, scientific, and factual questions and has been the subject of frequent litigation in recent years. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain. Our patent applications may not result in patents being issued that protect our product candidate and other proprietary technologies we may develop or that effectively prevent others from commercializing competitive technologies and products. Further, no consistent policy regarding the breadth of claims allowed in pharmaceutical patents has emerged to date in the United States or in many jurisdictions outside of the United States. Changes in either the patent laws or interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be enforced in the patents that may be issued from the applications we may own or license from third parties. Further, if any patents we obtain or license are deemed invalid and unenforceable, our ability to commercialize or license our technology could be adversely affected.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our actual or potential future collaborators will be successful in protecting our product candidate and other proprietary technologies and their uses by obtaining, defending and enforcing patents. These risks and uncertainties include the following:

- the United States Patent and Trademark Office, or USPTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process, the noncompliance with which can result in abandonment or lapse of a patent or patent application, and partial or complete loss of patent rights in the relevant jurisdiction;
- patent applications may not result in any patents being issued;
- issued patents may be challenged, invalidated, modified, revoked, circumvented, found to be unenforceable, or may otherwise not provide any competitive advantage;

- our competitors, many of whom have substantially greater resources than we do and many of whom have made significant investments in competing technologies, may seek or may have already obtained patents that will limit, interfere with, or eliminate our ability to make, use and sell our product candidate;
- other parties may have designed around our claims or developed technologies that may be related or competitive to ours, may have filed or may file patent applications and may have received or may receive patents that overlap or conflict with our patent applications and/or patents, either by claiming the same composition of matter, methods or formulations or by claiming subject matter that could dominate our patent position;
- any successful opposition to any patents owned by or licensed to us could deprive us of rights necessary for the practice of our technologies or the successful commercialization of any product candidate that we may develop;
- because patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we or our licensors were the first to file any patent application related to our product candidate and other proprietary technologies and their uses;
- an interference proceeding can be provoked by a third party or instituted by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of any application with an effective filing date before March 16, 2013;
- there may be significant pressure on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns; and
- countries other than the United States may have patent laws less favorable to patentees than those upheld by U.S. courts, allowing foreign competitors a better opportunity to create, develop, and market competing product candidate in those countries.

The patent prosecution process is expensive, time-consuming, and complex, and we may not be able to file, prosecute, or maintain all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach such agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection for such output. In addition, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our inventions and the prior art allow our inventions to be patentable over the prior art. Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. If we do not adequately protect our intellectual property and proprietary technology, competitors may be able to use our product candidate and other proprietary technologies and erode or negate any competitive advantage we may

have, which could have a material adverse effect on our financial condition and results of operations. For example:

- others may be able to make compounds that are similar to our product candidate but that are not covered by the claims of our patents;
- we might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- any patents that we obtain may not provide us with any competitive advantages;
- we may not develop additional proprietary technologies that are patentable;
- our competitors might conduct research and development activities in countries where we do not have patent rights or where patent protection is weak and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we cannot ensure that we will be able to successfully commercialize our product candidate on a substantial scale, if approved, before the relevant patents that we own or license expire; or
- the patents of others may have an adverse effect on our business.

Others have filed, and in the future are likely to file, patent applications covering products and technologies that are similar, identical or competitive to ours or important to our business. We cannot be certain that any patent application owned by a third party will not have priority over patent applications filed or in-licensed by us, or that we or our licensors will not be involved in interference, opposition or invalidity proceedings before U.S. or non-U.S. patent offices.

We cannot be certain that claims in an issued patent covering our product candidate will be considered patentable by the USPTO, courts in the United States, or by patent offices and courts in foreign countries. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property internationally.

The strength of patents in the biotechnology and pharmaceutical fields involves complex legal and scientific questions and can be uncertain. Patent applications that we file or in-license may fail to result in issued patents with claims that cover our product candidate in the United States or in foreign countries. Even if such patents do successfully issue, third parties may challenge the ownership, validity, enforceability, or scope thereof, which may result in such patents being narrowed, invalidated, or held unenforceable. Any successful opposition to our patents could deprive us of exclusive rights necessary for the successful commercialization of our product candidate. Furthermore, even if they are unchallenged, our patents may not adequately protect our intellectual property, provide exclusivity for our product candidate or prevent others from designing around our claims. If the breadth or strength of protection provided by our patents with respect to our product candidate is threatened, it could dissuade companies from collaborating with us to develop, or threaten our ability to commercialize our product candidate.

For U.S. patent applications in which claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third party or instituted by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights from the prevailing

party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our participation in an interference proceeding may fail and, even if successful, may result in substantial costs and distract our management and other employees.

For U.S. patent applications containing a claim not entitled to priority before March 16, 2013, there is greater level of uncertainty in the patent law. In September 2011, the Leahy-Smith America Invents Act, or America Invents Act, was signed into law. The America Invents Act includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The USPTO is developing regulations and procedures to govern the administration of the America Invents Act, and many of the substantive changes to patent law associated with the America Invents Act, and in particular, the "first to file" provisions, were enacted on March 16, 2013. This will require us to be cognizant going forward of the time from invention to filing of a patent application and be diligent in filing patent applications, but circumstances could prevent us from promptly filing patent applications on our inventions. It remains unclear what impact the America Invents Act will have on the operation of our business. As such, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

Patent terms may be inadequate to protect our competitive position on our product candidate for an adequate amount of time.

The term of any individual patent depends on applicable law in the country where the patent is granted. In the United States, provided all maintenance fees are timely paid, a patent generally has a term of 20 years from its application filing date or earliest claimed non-provisional filing date. Extensions may be available under certain circumstances, but the life of a patent and, correspondingly, the protection it affords is limited. When the terms of all patents covering our product candidate expire, our business may become subject to competition from competitive products, including biosimilar version of our products.

Our product candidate is protected by patents covering the composition of matter and methods of using ACU193. The patents in this portfolio are predicted to expire in 2031 without taking into account any possible extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. We cannot be certain that we will file and, if filed, obtain patent protection for our product candidate beyond our rights in the current ACU193 patent portfolio. If we are unable to obtain additional patent protection on ACU193, our primary protection from biosimilar market entry will be limited to regulatory biologic exclusivity.

If we do not obtain patent term extension for our product candidate our business may be materially harmed.

Depending upon the timing, duration, and specifics of any FDA marketing approval of our product candidate, one or more of patents issuing from U.S. patent applications that we file or license may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term, or PTE, of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. Similar patent term restoration provisions to compensate for commercialization delay caused by regulatory review are also available in certain foreign jurisdictions, such as in Europe under Supplemental Protection Certificate, or SPC. If we encounter delays in our development efforts, including our future clinical trials, the period of time during which we could market our product candidate under patent protection would be reduced. Additionally, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents, or otherwise fail to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration, or the term of any such extension is

less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties, or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

Licensing of intellectual property rights is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property rights subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property rights of the licensor that are not subject to the license agreement;
- our right to sublicense intellectual property rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidate, and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

If disputes over intellectual property rights that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms and/or to secure the our rights to the licensed intellectual property, our business, results of operations, financial condition, and prospects may be adversely affected. We may enter into additional licenses in the future and if we fail to comply with obligations under those agreements, we could suffer adverse consequences.

We were a party to a collaboration agreement with Merck to research, discover and develop certain technology related to amyloid beta-derived diffusible ligands, or ADDLs. This collaboration was initiated in 2003 and was later terminated by Merck in 2011. During the collaboration, ACU193, an ADDL-binding antibody, was developed and intellectual property was filed by Merck. Under the surviving provisions of the collaboration agreement, Merck exclusively licensed Merck’s interest in patent rights claiming ADDL antibodies, ADDL antigens and/or products to Acumen. If a dispute were to arise in the future as to our rights to the intellectual property under the agreement, our ability to commercialize ACU193 may be jeopardized.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent process. Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on any issued patents and/or applications are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ outside counsel to pay these fees due to foreign patent agencies. While an inadvertent lapse may sometimes be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance

can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market with similar or identical products or technology earlier than should otherwise have been the case, which would have a material adverse effect on our business, financial condition, results of operations, and prospects.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our product candidate.

As is the case with other biotechnology and pharmaceutical companies, our success is heavily dependent on intellectual property, particularly on obtaining and enforcing patents. Our patent rights may be affected by developments or uncertainty in U.S. or foreign patent statutes, patent case law, USPTO rules and regulations or the rules and regulations of foreign patent offices. Obtaining and enforcing patents in the biotechnology and pharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the United States may, at any time, enact changes to U.S. patent law and regulations, including by legislation, by regulatory rule-making, or by judicial precedent, that adversely affect the scope of patent protection available and weaken the rights of patent owners to obtain patents, enforce patent infringement and obtain injunctions and/or damages. For example, the scope of patentable subject matter under 35 U.S.C. 101 has evolved significantly over the past several years as the Court of Appeals for the Federal Circuit and the Supreme Court issued various opinions, and the USPTO modified its guidance for practitioners on multiple occasions. Other countries may likewise enact changes to their patent laws in ways that adversely diminish the scope of patent protection and weaken the rights of patent owners to obtain patents, enforce patent infringement, and obtain injunctions and/or damages.

Further, the United States and other governments may, at any time, enact changes to law and regulation that create new avenues for challenging the validity of issued patents. For example, the America Invents Act created new administrative post-grant proceedings, including post-grant review, inter partes review, and derivation proceedings that allow third parties to challenge the validity of issued patents. This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in U.S. federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Patents are of national or regional effect. Filing, prosecuting, and defending patents on our product candidate, and other proprietary technologies we develop in all countries throughout the world would be prohibitively expensive. In addition, the laws of some foreign countries do not protect intellectual property rights in the same manner and to the same extent as laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement of such patent protection is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

The requirements for patentability may differ in certain countries. For example, unlike other countries, China has a heightened requirement for patentability, and specifically requires a detailed description of medical uses of a

claimed drug. In India, unlike the United States, there is no link between regulatory approval for a drug and its patent status. In addition to India, certain countries in Europe and developing countries, including China, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, some countries limit the enforceability of patents against government agencies or government contractors.

In those countries, we may have limited remedies if patents are infringed or if we are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology or pharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

We may become subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may be subject to claims that former employees (including former employees of our licensors), collaborators or other third parties have an interest in our patents rights, trade secrets, or other intellectual property as an inventor or co-inventor. The failure to name the proper inventors on a patent application can result in the patents issuing thereon being unenforceable. For example, we may have inventorship disputes arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidate or as a result of questions regarding co-ownership of potential joint inventions. Litigation may be necessary to resolve these and other claims challenging inventorship and/or ownership. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business, financial condition, results of operations and prospects. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may not be successful in obtaining or maintaining necessary rights to product components and processes for our development pipeline through in-licenses.

Presently we have intellectual property rights to our product candidate, through a license from Merck. We also have an intellectual property license through a license with Northwestern University and, if this agreement remains in place, we could be required to pay low single digit royalties to Northwestern in the future. Because our program may require the use of additional proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. In addition, our product candidate may require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license, on reasonable terms, proprietary rights related to any compositions, formulations, methods of use, processes or other intellectual property rights from third parties that we identify as being necessary for our product candidate. Even if we are able to obtain a license to such

proprietary rights, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

Where we obtain licenses from or collaborate with third parties, we may not have the right to control the preparation, filing, and prosecution of patent applications, or to maintain or enforce the patents, covering technology that we license from third parties, or such activities, if controlled by us, may require the input of such third parties. If any of our licensors or collaboration partners fail to prosecute, maintain and enforce such patents and patent applications in a manner consistent with the best interests of our business, including by payment of all applicable fees for patents covering our product candidate, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, our ability to develop and commercialize those product candidate may be adversely affected and we may not be able to prevent competitors from making, using and selling competing products. In addition, even where we have the right to control patent prosecution of patents and patent applications we have licensed from third parties, we may still be adversely affected or prejudiced by actions or inactions of our licensors and their counsel that took place prior to the date upon which we assumed control over patent prosecution. We may also require the cooperation of our licensors and collaborators to enforce any licensed patent rights, and such cooperation may not be provided. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business, or in compliance with applicable laws and regulations, which may affect the validity and enforceability of such patents or any patents that may issue from such application.

Moreover, we will likely have obligations under our current or future licenses, including making royalty and milestone payments, and any failure to satisfy those obligations could give our licensor the right to terminate the license. Termination of a necessary license, or expiration of licensed patents or patent applications, could have a material adverse impact on our business. Our business would suffer if any such licenses terminate, if the licensors fail to abide by the terms of the license, if the licensors fail to enforce licensed patents against infringing third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms. Furthermore, if any licenses terminate, or if the underlying patents fail to provide the intended exclusivity, competitors or other third parties may gain the freedom to seek regulatory approval of, and to market, products identical or similar to ours. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor’s rights. In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

The licensing and acquisition of third-party proprietary rights is a competitive area, and companies, which may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party proprietary rights that we may consider necessary or attractive in order to commercialize our product candidate. More established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, we have collaborated and may in the future collaborate with U.S. and foreign academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate an exclusive license to any of the institution’s proprietary rights in technology resulting from the collaboration. Regardless of such option to negotiate a license, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to us. If we are unable to do so, the institution may offer, on an exclusive basis, their proprietary rights to other parties, potentially blocking our ability to pursue our program. In addition, disputes may arise under our existing or future license agreements with these institutions or with other counterparties which may, among other things, lead to the termination or renegotiation of these agreements, or otherwise require us to incur significant financial obligations.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us, either on reasonable terms, or at all. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment, or at all. If we are unable to successfully obtain rights to required third-party intellectual property rights on commercially reasonable terms, our ability to commercialize our products, and our business, financial condition, and prospects for growth, could suffer.

Third-party claims alleging intellectual property infringement may prevent or delay our drug discovery and development efforts.

Our success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including inter partes review, interference and reexamination proceedings before the USPTO, or oppositions and other comparable proceedings in foreign jurisdictions. The America Invents Act introduced new procedures including inter partes review and post grant review. The implementation of these procedures brings uncertainty to the possibility of challenges to our patents in the future and the outcome of such challenges. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidate. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our activities related to our product candidate may give rise to claims of infringement of the patent rights of others.

The pharmaceutical and biotechnology industries have produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. We cannot assure you that any of our current or future product candidate will not infringe existing or future patents. We may not be aware of patents that have already issued that a third party might assert are infringed by one of our current or future product candidate.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents of which we are currently unaware with claims to materials, compositions, formulations, methods of manufacture or methods for treatment related to our product candidate, or the use or manufacture of our product candidate. Because patent applications can take many years to issue and may be confidential for 18 months or more after filing, there may be currently pending third-party patent applications which may later result in issued patents that our product candidate, and other proprietary technologies may infringe, or which such third parties claim are infringed by the use of our technologies. Parties making claims against us for infringement or misappropriation of their intellectual property rights may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidate. Defense of these claims, regardless of their merit, could involve substantial expenses and could be a substantial diversion of management and other employee resources from our business.

If we collaborate with third parties in the development of technology in the future, our collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to litigation or potential liability. Further, collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability. In the future, we may agree to indemnify our commercial collaborators against certain intellectual property infringement claims brought by third parties.

Any claims of patent infringement asserted by third parties would be time-consuming and could:

- result in costly litigation;
- divert the time and attention of our technical personnel and management;

- cause development delays;
- prevent us from commercializing our product candidate until the asserted patent expires or is finally held invalid, unenforceable, or not infringed in a court of law;
- require us to develop non-infringing technology, which may not be possible on a cost-effective basis;
- require us to pay damages to the party whose intellectual property rights we may be found to be infringing, which may include treble damages if we are found to have been willfully infringing such intellectual property;
- require us to pay the attorney's fees and costs of litigation to the party whose intellectual property rights we may be found to be willfully infringing; and/or
- require us to enter into royalty or license agreements, which may not be available on commercially reasonable terms, or at all.

If we are sued for patent infringement, we would need to demonstrate that our products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do either. Proving invalidity or unenforceability is difficult. For example, in the United States, proving invalidity before federal courts requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and divert management's time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, which may not be available, defend an infringement action or challenge the validity or enforceability of the patents in court. Patent litigation is costly and time-consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, develop or obtain non-infringing technology, fail to defend an infringement action successfully or have infringed patents declared invalid or unenforceable, we may incur substantial monetary damages, encounter significant delays in bringing our product candidate to market and be precluded from developing, manufacturing or selling our product candidate.

We do not always conduct independent reviews of pending patent applications of and patents issued to third parties. We cannot be certain that any of our or our licensors' patent searches or analyses, including but not limited to the identification of relevant patents, analysis of the scope of relevant patent claims or determination of the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending application in the United States, Europe and elsewhere that is relevant to or necessary for the commercialization of our product candidate in any jurisdiction, because:

- some patent applications in the United States may be maintained in secrecy until the patents are issued;
- patent applications in the United States and elsewhere can be pending for many years before issuance, or unintentionally abandoned patents or applications can be revived;
- pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our technologies, our product candidate or their uses;
- identification of third-party patent rights that may be relevant to our technology is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases, and the difficulty in assessing the meaning of patent claims;

- patent applications in the United States are typically not published until 18 months after the priority date; and
- publications in the scientific literature often lag behind actual discoveries.

Furthermore, the scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history and can involve other factors such as expert opinion. Our interpretation of the relevance or the scope of claims in a patent or a pending application may be incorrect, which may negatively impact our ability to market our products. Further, we may incorrectly determine that our technologies or product candidate are not covered by a third party patent or may incorrectly predict whether a third party's pending patent application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or internationally that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our products or product candidate.

Our competitors may have filed, and may in the future file, patent applications covering technology similar to ours, and others may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import our product candidate or future products or impair our competitive position. Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields in which we are developing product candidate. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidate. Any such patent application may have priority over one of our patent applications, which could further require us to obtain rights to issued patents covering such technologies. If another party has filed a U.S. patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the USPTO to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful if, unbeknownst to us, the other party had independently arrived at the same or similar invention prior to our own invention, resulting in a loss of our U.S. patent position with respect to such inventions. Other countries have similar laws that permit secrecy of patent applications and may be entitled to priority over our applications in such jurisdictions.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

If a third party prevails in a patent infringement lawsuit against us, we may have to stop making and selling the infringing product, pay substantial damages, including treble damages and attorneys' fees if we are found to be willfully infringing a third party's patents, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure.

We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidate. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidate, which could harm our business significantly. Even if we were able to obtain a license, the rights may be nonexclusive, which may give our competitors access to the same intellectual property.

We may be subject to claims that we have wrongfully hired an employee from a competitor or that we or our employees have wrongfully used or disclosed alleged confidential information or trade secrets of their former employers.

As is common in the biotechnology and pharmaceutical industries, in addition to our employees, we engage the services of consultants to assist us in the development of our product candidate, and other proprietary

technologies. Many of these consultants, and many of our employees, were previously employed at, or may have previously provided or may be currently providing consulting services to, other pharmaceutical companies including our competitors or potential competitors. We may become subject to claims that we, our employees or a consultant inadvertently or otherwise used or disclosed trade secrets or other information proprietary to their former employers or their former or current clients. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely affect our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to our management team and other employees.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming, and unsuccessful. Further, our issued patents could be found invalid or unenforceable if challenged in court, and we may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights.

Third parties including competitors may infringe, misappropriate or otherwise violate our patents, patents that may issue to us in the future, or the patents of our licensors that are licensed to us. To counter infringement or unauthorized use, we may need to or choose to file infringement claims, which can be expensive and time-consuming. We may not be able to prevent, alone or with our licensors, infringement, misappropriation, or other violation of our intellectual property, particularly in countries where the laws may not protect those rights as fully as in the United States, or if we require, but do not receive, the consent or cooperation of our licensors to enforce such intellectual property.

If we choose to go to court to stop another party from using the inventions claimed in our patents, that individual or company has the right to ask the court to rule that such patents are invalid, unenforceable, or should not be enforced against that third party for any number of reasons. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include an alleged failure to meet any of several statutory requirements for patentability, including lack of novelty, obviousness, lack of written description, indefiniteness, or non-enablement. Grounds for an unenforceability assertion could include an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution, i.e., committed inequitable conduct. Third parties may also raise similar claims before the USPTO, even outside the context of litigation. Similar mechanisms for challenging the validity and enforceability of a patent exist in foreign patent offices and courts and may result in the revocation, cancellation, or amendment of any foreign patents we or our licensors hold now or in the future. The outcome following legal assertions of invalidity and unenforceability is unpredictable, and prior art could render our patents or those of our licensors invalid. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on such product candidate. Such a loss of patent protection would have a material adverse impact on our business.

Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to conduct our future clinical trials, continue our research programs, license necessary technology from third parties, or enter into development or manufacturing partnerships that would help us bring our product candidate to market.

We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace. Even if resolved in our favor, litigation or other legal proceedings relating to our intellectual property rights may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions, or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Our ability to enforce our patent rights depends on our ability to establish standing in a court of competent jurisdiction. Whether a patent holder or licensee of a patent has standing can be uncertain and the considerations complex. However, if a licensor is required to be joined, and they are unwilling to do so, we may be unable to proceed with an infringement action.

Our ability to enforce our patent rights depends on our ability to detect infringement. It may be difficult to detect infringers who do not advertise the components or methods that are used in connection with their products and services. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product or service. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

Because of the expense and uncertainty of litigation, we may not be in a position to enforce our intellectual property rights against third parties.

Because of the expense and uncertainty of litigation, we may conclude that even if a third party is infringing our issued patent or patents that may issue from patent applications or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such a claim or action may be too high or not in the best interest of our company or our stockholders. In such cases, we may decide that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed. Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

We rely on trade secrets to protect our proprietary technologies, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. We rely in part on confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers, and/or other advisors, and inventions agreements with employees, consultants, and advisors, to protect our trade secrets and other proprietary information. In addition to contractual measures, we try to protect the confidential nature of our proprietary information using commonly accepted physical and technological security measures. Despite these efforts, we cannot provide any assurances that all such agreements have been duly executed, and these agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our

proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

In addition, such security measures may not provide adequate protection for our proprietary information, for example, in the case of misappropriation of a trade secret by an employee, consultant, customer, or third party with authorized access. Our security measures may not prevent an employee, consultant or customer from misappropriating our trade secrets and providing them to a competitor, and recourse we take against such misconduct may not provide an adequate remedy to protect our interests fully. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. Unauthorized parties may also attempt to copy or reverse engineer certain aspects of our products that we consider proprietary. Even though we use commonly accepted security measures, the criteria for protection of trade secrets can vary among different jurisdictions.

Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. Moreover, third parties may still obtain this information or may come upon this or similar information independently, and we would have no right to prevent them from using that technology or information to compete with us. Trade secrets will over time be disseminated within the industry through independent development, the publication of journal articles, and the movement of personnel skilled in the art from company to company or academic to industry scientific positions. Though our agreements with third parties typically restrict the ability of our advisors, employees, collaborators, licensors, suppliers, third-party contractors, and/or consultants to publish data potentially relating to our trade secrets, our agreements may contain certain limited publication rights. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position. Because from time to time we expect to rely on third parties in the development, manufacture, and distribution of our products and provision of our services, we must, at times, share trade secrets with them. Despite employing the contractual and other security precautions described above, the need to share trade secrets increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. If any of these events occurs or if we otherwise lose protection for our trade secrets, the value of this information may be greatly reduced and our competitive position would be harmed. If we do not apply for patent protection prior to such publication or if we cannot otherwise maintain the confidentiality of our proprietary technology and other confidential information, then our ability to obtain patent protection or to protect our trade secret information may be jeopardized.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our trademarks or trade names, once registered, may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names. Our efforts to enforce or protect our proprietary rights related to trademarks, trade names, trade secrets, domain names, copyrights, or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our financial condition or results of operations.

Moreover, any names we may propose to use with our product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA (or an equivalent administrative body in a foreign jurisdiction) objects to any of our proposed proprietary product names, it may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties, and be acceptable to the FDA. Similar requirements exist in Europe. Furthermore, in many countries, owning and maintaining a trademark registration may not provide an adequate defense against a subsequent infringement claim asserted by the owner of a senior trademark. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. If we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Any collaboration arrangements that we may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize our future products.

Any future collaborations that we enter into may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborations are subject to numerous risks, which may include that:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations;
- collaborators may not pursue development and commercialization of our products or may elect not to continue or renew development or commercialization programs based on trial or test results, changes in their strategic focus due to the acquisition of competitive products, availability of funding, or other external factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidate;
- a collaborator with marketing, manufacturing, and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that causes the delay or termination of the research, development, or commercialization of our current or future products or that results in costly litigation or arbitration that diverts management attention and resources;

- collaborations may be terminated, and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable current or future products;
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property; and
- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings.

Intellectual property discovered through government funded programs may be subject to federal regulations such as "march-in" rights, certain reporting requirements and a preference for U.S.-based companies. Compliance with such regulations may limit our exclusive rights and limit our ability to contract with non-U.S. manufacturers.

Some of our patents may have been generated through the use of U.S. government funding, and we may acquire or license in the future intellectual property rights that have been generated through the use of U.S. government funding or grants. Pursuant to the Bayh-Dole Act of 1980, the U.S. government has certain rights in inventions developed with government funding. These U.S. government rights include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right, under certain limited circumstances, to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if it determines that: (1) adequate steps have not been taken to commercialize the invention; (2) government action is necessary to meet public health or safety needs; or (3) government action is necessary to meet requirements for public use under federal regulations (also referred to as "march-in rights"). If the U.S. government exercised its march-in rights in our existing or future intellectual property rights that are generated through the use of U.S. government funding or grants, we could be forced to license or sublicense intellectual property developed by us or that we license on terms unfavorable to us, and there can be no assurance that we would receive compensation from the U.S. government for the exercise of such rights. The U.S. government also has the right to take title to these inventions if the grant recipient fails to disclose the invention to the government or fails to file an application to register the intellectual property within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources. In addition, the U.S. government requires that any products embodying any of these inventions or produced through the use of any of these inventions be manufactured substantially in the United States. This preference for U.S. industry may be waived by the federal agency that provided the funding if the owner or assignee of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for U.S. industry may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property.

Risks Related to Legal and Regulatory Compliance Matters

Our relationships with customers, healthcare providers, including physicians, and third-party payors are subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Healthcare providers, including physicians, and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third- party payors subject us to various federal and state fraud and abuse laws and other

healthcare laws, including, without limitation, the federal Anti-Kickback Statute, the federal civil and criminal false claims laws and the law commonly referred to as the Physician Payments Sunshine Act and regulations promulgated under such laws. These laws will impact, among other things, our clinical research, proposed sales, marketing and educational programs, and other interactions with healthcare professionals. In addition, we may be subject to patient privacy laws by both the federal government and the states in which we conduct or may conduct our business. The laws that will affect our operations include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, individuals or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind in return for, or to induce, either the referral of an individual, or the purchase, lease, order or arrangement for or recommendation of the purchase, lease, order or arrangement for any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term “remuneration” has been broadly interpreted to include anything of value. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. A person does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation;

- the federal civil and criminal false claims laws, including, without limitation, the federal False Claims Act, which can be enforced by private citizens through civil whistleblower or qui tam actions, and civil monetary penalty laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from the federal government, including Medicare, Medicaid and other government payors, that are false or fraudulent or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim or to avoid, decrease or conceal an obligation to pay money to the federal government. A claim includes “any request or demand” for money or property presented to the U.S. federal government. Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies’ marketing of products for unapproved, and thus non-reimbursable, uses. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act;

- HIPAA which created additional federal criminal statutes which prohibit, among other things, a person from knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal transparency laws, including the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, medical devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the State Children’s Health Insurance Program, with specific exceptions, to report annually to the CMS, information related to: (i) payments or other “transfers of value’’ made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and (ii) ownership and investment interests held by physicians and their immediate family members. Effective January 1,

2022, these reporting obligations will extend to include transfers of value made during the previous year to physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives; and

- analogous state and foreign laws and regulations; state laws that require manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers, marketing expenditures or drug pricing; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or that otherwise restrict payments that may be made to healthcare providers; and state and local laws that require the registration of pharmaceutical sales representatives.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant penalties, including, without limitation, civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participating in federal and state funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, diminished profits and future earnings, reputational harm and the curtailment or restructuring of our operations, any of which could harm our business.

The risk of our being found in violation of these laws is increased by the fact that many of them have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. The shifting compliance environment and the need to build and maintain robust and expandable systems to comply with multiple jurisdictions with different compliance and reporting requirements increases the possibility that a healthcare company may run afoul of one or more of the requirements.

Even if we obtain regulatory approval for ACU193 or any future product candidates, they will remain subject to ongoing regulatory oversight, which may result in significant additional expense.

Even if we obtain any regulatory approval for ACU193 or any future product candidates, such product candidates will be subject to ongoing regulatory requirements applicable to research, development, testing, manufacturing, labeling, packaging, storage, advertising, promoting, sampling, record-keeping and submission of safety and other post-market information, among other things. Any regulatory approvals that we receive for ACU193 or any future product candidates may also be subject to REMS, limitations on the approved indicated uses for which the drug may be marketed or to the conditions of approval or requirements that we conduct potentially costly post-marketing testing and surveillance studies, including Phase 4 trials and surveillance to monitor the quality, safety and efficacy of the drug. An unsuccessful post-marketing study or failure to complete such a study could result in the withdrawal of marketing approval. We will further be required to immediately report any serious and unexpected adverse events and certain quality or production problems with our products to regulatory authorities along with other periodic reports. Any new legislation addressing drug safety issues could result in delays in product development or commercialization, or increased costs to assure compliance. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements

or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

In addition, drug manufacturers are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP requirements and adherence to commitments made in the BLA or foreign marketing application. If we, or a regulatory authority, discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured or if a regulatory authority disagrees with the promotion, marketing or labeling of that drug, a regulatory authority may impose restrictions relative to that drug, the manufacturing facility or us, including requesting a recall or requiring withdrawal of the drug from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of ACU193 or any future product candidates, a regulatory authority may:

- issue an untitled letter or warning letter asserting that we are in violation of the law;
- seek an injunction or impose administrative, civil or criminal penalties or monetary fines;
- issue a safety alert, Dear Healthcare Provider letter, press release or other communication containing warnings or safety information about the product;
- mandate corrections to promotional materials and labeling or issuance of corrective information;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve a pending marketing application or supplement to an approved application or comparable foreign marketing application (or any supplements thereto) submitted by us or our strategic partners;
- restrict the marketing or manufacturing of the drug;
- seize or detain the drug or otherwise require the withdrawal of the drug from the market;
- refuse to permit the import or export of products or product candidates; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize ACU193 or any future product candidates and harm our business, financial condition, results of operations and prospects.

Even if we obtain FDA or EMA approval any of our product candidates in the United States or European Union, we may never obtain approval for or commercialize any of them in any other jurisdiction, which would limit our ability to realize their full market potential.

In order to market any products in any particular jurisdiction, we must establish and comply with numerous and varying regulatory requirements on a country-by-country basis regarding safety and efficacy.

Approval by the FDA in the United States or the EMA in the European Union does not ensure approval by regulatory authorities in other countries or jurisdictions. However, the failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval elsewhere. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country.

Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

Seeking foreign regulatory approval could result in difficulties and increased costs for us and require additional nonclinical studies or clinical trials which could be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. We do not have any product candidates approved for sale in any jurisdiction, including in international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of any product we develop will be unrealized.

Healthcare legislative or regulatory reform measures may have a negative impact on our business and results of operations.

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. For example, in March 2010, the ACA was passed, which substantially changed the way healthcare is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things: (i) established an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs; (ii) expanded the entities eligible for discounts under the 340B drug pricing program; (iii) increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP; (iv) expanded the eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new eligibility categories for individuals with income at or below 133% (as calculated, it constitutes 138%) of the federal poverty level, thereby potentially increasing manufacturers’ Medicaid rebate liability; (v) addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics that are inhaled, infused, instilled, implanted or injected; (vi) introduced a new Medicare Part D coverage gap discount program in which manufacturers must now agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D (increased from 50%, effective January 1, 2019, pursuant to the Bipartisan Budget Act of 2018); (vii) created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and (viii) established the Center for Medicare and Medicaid Innovation at CMS to test

innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug.

There have been executive, judicial and Congressional challenges to certain aspects of the ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 (the Tax Act) included a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate.” On December 14, 2018, a Texas United States District Court Judge ruled that the ACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress as part of the Tax Act. Additionally, on December 18, 2019, the United States Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. The United States Supreme Court is currently reviewing this case, although it is unclear when a decision will be made. Although the United States Supreme Court has not yet ruled on the constitutionality of the ACA, on January 28, 2021, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through May 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructs certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is also unclear how the Supreme Court ruling, other such litigation and the healthcare reform measures of the Biden administration will impact the ACA or our business.

Other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013, and due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through March 31, 2021, unless additional Congressional action is taken. Legislation is currently pending in Congress that would further extend the suspension through December 31, 2021. The American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These laws may result in additional reductions in Medicare and other healthcare funding, which could have an adverse effect on customers for our product candidates, if approved, and, accordingly, our financial operations.

Additionally, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that seek to implement several of the administration’s proposals. As a result, the FDA also released a final rule on September 24, 2020 providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, HHS finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed until January 1, 2023. Further, in November 2020, CMS issued

an interim final rule implementing the Most Favored Nation, or MFN, Model under which Medicare Part B reimbursement rates will be calculated for certain drugs and biologicals based on the lowest price drug manufacturers receive in Organization for Economic Cooperation and Development countries with a similar gross domestic product per capita. The MFN Model regulations mandate participation by identified Part B providers and will apply in all U.S. states and territories for a seven-year period beginning January 1, 2021 and ending December 31, 2027. On December 28, 2020, the United States District Court in Northern California issued a nationwide preliminary injunction against implementation of the interim final rule. The likelihood of implementation of any of the other Trump administration reform initiatives is uncertain, particularly in light of the new Biden administration.

We expect that these and other healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved drug. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our drugs. It is also possible that additional governmental action is taken to address the COVID-19 pandemic.

In addition, FDA regulations and guidance may be revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. For example, the results of the 2020 U.S. Presidential election may impact our business and industry. The Trump administration took several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. It is difficult to predict whether or how these requirements will be interpreted and implemented, or whether they will be rescinded and replaced under the Biden administration. The policies and priorities of the new administration are unknown and could materially impact the regulations governing our product candidates. Any new regulations or guidance, or revisions or reinterpretations of existing regulations or guidance, may impose additional costs or lengthen FDA review times for ACU193 or any other product candidate we may develop. We cannot determine how changes in regulations, statutes, policies, or interpretations when and if issued, enacted or adopted, may affect our business in the future. Such changes could, among other things, require:

- additional clinical trials to be conducted prior to obtaining approval;
- changes to manufacturing methods;
- recalls, replacements, or discontinuance of one or more of our products; and
- additional recordkeeping.

Such changes would likely require substantial time and impose significant costs, or could reduce the potential commercial value of ACU193 or other product candidates, and could materially harm our business and our financial results. In addition, delays in receipt of or failure to receive regulatory clearances or approvals for any other products would harm our business, financial condition and results of operations.

Our business activities may be subject to the U.S. Foreign Corrupt Practices Act of 1977, or FCPA, and similar anti-bribery and anti-corruption laws.

Our business activities may be subject to the FCPA, U.S. domestic bribery statutes, and similar anti-bribery or anti-corruption laws, regulations or rules of other countries in which we may operate, including the U.K. Bribery Act of 2010. The FCPA generally prohibits offering, promising, giving, or authorizing others to give anything of value, either directly or indirectly, to a non-U.S. government official in order to influence official action, or otherwise obtain or retain business. The FCPA also requires public companies to make and keep books and

records that accurately and fairly reflect the transactions of the corporation and to devise and maintain an adequate system of internal accounting controls. Our business is heavily regulated and therefore involves significant interaction with public officials, including officials of non-U.S. governments. Additionally, in many other countries, hospitals are owned and operated by the government, and doctors and other hospital employees would be considered foreign officials under the FCPA. There is no certainty that all of our employees, agents, contractors or those of our affiliates, will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws. Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers, or our employees, the closing down of our facilities, implementation of compliance programs and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to offer our product candidates in one or more countries and could materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, and our business, prospects, operating results and financial condition.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading, which could significantly harm our business.

We are exposed to the risk of fraud or other misconduct by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA and non-U.S. regulators, provide accurate information to the FDA and non-U.S. regulators, comply with health care fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the health care industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Our insurance policies are expensive and only protect us from some business risks, which will leave us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. Some of the policies we currently maintain include general liability, products liability and directors’ and officers’ insurance. We do not know, however, if we will be able to maintain insurance with adequate levels of coverage. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of ACU193 or any other product candidate. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our financial position and results of operations.

Risks Related to Employee Matters and Managing our Growth

We will need to expand our operations and increase the size of our company, and we may experience difficulties in managing growth.

As we advance ACU193 through clinical development, and potentially expand the number of our drug development programs, we will need to increase our drug development, scientific and administrative headcount to manage these programs. In addition, to meet our obligations as a public company, we will need to increase our

general and administrative capabilities. Our management, personnel and systems currently in place may not be adequate to support this future growth. Our need to effectively manage our operations, growth and various projects requires that we:

- successfully attract and recruit new employees or consultants with the expertise and experience we will require;
- manage our clinical programs effectively, which we anticipate being conducted at numerous clinical sites;
- develop a marketing and sales infrastructure; and
- continue to improve our operational, financial and management controls, reporting systems and procedures.

If we are unable to successfully manage this growth and increased complexity of operations, our business may be adversely affected.

We may not be able to manage our business effectively if we are unable to attract and retain key personnel and consultants.

We may not be able to attract or retain qualified management, finance, scientific and clinical personnel and consultants due to the intense competition for qualified personnel and consultants among biotechnology, pharmaceutical and other businesses. If we are not able to attract and retain necessary personnel and consultants to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

Our industry has experienced a high rate of turnover of management personnel in recent years. We are highly dependent on the research and development, clinical, regulatory and business development expertise of Daniel O'Connell, President and Chief Executive Officer, Eric Siemers, M.D., our Chief Medical Officer and Russell Barton, our Chief Operating Officer. If we lose the services of any of these individuals, our ability to implement our business strategy successfully could be seriously harmed. Any of our executive officers or key employees or consultants may terminate their employment at any time. Replacing executive officers, key employees and consultants may be difficult and may take an extended period because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain regulatory approval of and commercialize product candidates successfully. Competition to hire and retain employees and consultants from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel and consultants. Our failure to retain key personnel or consultants could materially harm our business.

We have scientific and clinical advisors and consultants who assist us in formulating our research, development and clinical strategies. These advisors are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. Non-compete agreements are not permissible or are limited by law in certain jurisdictions and, even where they are permitted, these individuals typically will not enter into non-compete agreements with us. If a conflict of interest arises between their work for us and their work for another entity, we may lose their services. In addition, our advisors may have arrangements with other companies to assist those companies in developing product candidates or technologies that may compete with ours.

We have identified a material weakness in our internal control over financial reporting which could, if not remediated, result in material misstatements in our financial statements.

In connection with the preparation and audit of our consolidated financial statements as of December 31, 2020 and 2019 and for the years then ended, a material weakness was identified in our internal control over financial reporting. In addition, we have in the past identified other material weaknesses in our internal controls over financial accounting, which have since been remediated. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Our existing material weakness is related to segregation of duties related to roles and responsibilities in our accounting department which is lacking in various circumstances, including with respect to account reconciliation and receipt/disbursement duties, independent review of journal entries and access to the accounting systems. Our existing material weakness did not result in a misstatement to our financial statements, however, it could result in a misstatement of account balances or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected. We plan to remediate this material weakness by hiring additional accounting staff and upgrading our accounting systems, though there is no guarantee that these remediation efforts will be successful.

In order to maintain and improve the effectiveness of our internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight. Our independent registered public accounting firm is not required to formally attest to the effectiveness of its internal control over financial reporting until after it is no longer an “emerging growth company” as defined in the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which its internal control over financial reporting is documented, designed, or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could adversely affect our business and operating results and could cause a decline in the price of our common stock.

If we fail to build our finance infrastructure and improve our accounting systems and controls, we may be unable to comply with the financial reporting and internal controls requirements for publicly traded companies.

As a public company, we will operate in an increasingly demanding regulatory environment, which requires us to comply with the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, the regulations of Nasdaq Global Market, or Nasdaq, the rules and regulations of the SEC, expanded disclosure requirements, accelerated reporting requirements and more complex accounting rules. Company responsibilities required by the Sarbanes-Oxley Act include establishing corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud. Commencing with our fiscal year ending the year after this offering is completed, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act. Prior to this offering, we have never been required to test our internal controls within a specified period and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner.

We anticipate that the process of building our accounting and financial functions and infrastructure will require significant additional professional fees, internal costs and management efforts. We expect that we will need to implement a new internal system to combine and streamline the management of our financial, accounting, human resources and other functions. However, such a system would likely require us to complete many processes and procedures for the effective use of the system or to run our business using the system, which may result in substantial costs. Any disruptions or difficulties in implementing or using such a system could adversely affect

our controls and harm our business. Moreover, such disruption or difficulties could result in unanticipated costs and diversion of management attention. In addition, we may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and accurate financial statements. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed, investors could lose confidence in our reported financial information and we could be subject to sanctions or investigations by Nasdaq, the Commission or other regulatory authorities.

Risks Related to This Offering, Ownership of our Common Stock and our Status as a Public Company

An active trading market for our common stock may not develop and you may not be able to resell your shares of our common stock at or above the initial offering price, if at all.

Prior to this offering, there has been no public market for our common stock. The initial public offering price for our common stock was determined through negotiations with the underwriters and may not be indicative of the price at which our common stock will trade after the closing of this offering. Although our common stock has been approved for listing on Nasdaq, an active trading market for our shares may never develop or be sustained following this offering. If an active market for our common stock does not develop or is not sustained, it may be difficult for you to sell shares you purchased in this offering at an attractive price or at all.

The trading price of the shares of our common stock may be volatile, and purchasers of our common stock could incur substantial losses.

Our stock price may be volatile. The stock market in general and the market for biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their common stock at or above the price paid for the shares. The market price for our common stock may be influenced by many factors, including:

- the commencement, enrollment or results of our clinical trials, including the Phase 1 clinical trial of ACU193 and any future clinical trials we may conduct, or changes in the development status of our product candidates;
- any delay in our regulatory filings for ACU193 or any other product candidate we may develop, and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- delays in, or termination of, clinical trials;
- adverse regulatory decisions, including failure to receive regulatory approval of our product candidates;
- unanticipated serious safety concerns related to the use of ACU193 or any other product candidate we develop;

- changes in financial estimates by us or by any equity research analysts who might cover our stock;
- conditions or trends in our industry;
- changes in the market valuations of similar companies;
- announcements by our competitors of new product candidates or technologies, or the results of clinical trials or regulatory decisions;
- stock market price and volume fluctuations of comparable companies and, in particular, those that operate in the biopharmaceutical industry;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- announcements by us or our competitors of significant acquisitions, strategic partnerships or divestitures;
- our relationships with our collaborators;
- announcements of investigations or regulatory scrutiny of our operations or lawsuits filed against us;
- investors' general perception of our company and our business;
- recruitment or departure of key personnel;
- overall performance of the equity markets;
- trading volume of our common stock;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;
- changes in the structure of healthcare payment systems;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

The stock market in general, Nasdaq and biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies, including very recently in connection with the ongoing COVID-19 pandemic, which has resulted in decreased stock prices for many companies notwithstanding the lack of a fundamental change in their underlying business models or prospects. Broad market and industry factors, including potentially worsening economic conditions and other adverse effects or developments relating to the ongoing COVID-19 pandemic, may negatively affect the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this section, could have a significant and material adverse impact on the market price of our common stock.

In addition, in the past, stockholders have initiated class action lawsuits against pharmaceutical and biotechnology companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources from our business.

Because the public offering price of our common stock will be substantially higher than the net tangible book value per share of our outstanding common stock following this offering, new investors will experience immediate and substantial dilution.

The public offering price of our common stock is substantially higher than the net tangible book value per share of our common stock immediately following this offering based on the total value of our tangible assets less our total liabilities. Therefore, if you purchase shares of our common stock in this offering, you will experience immediate dilution of approximately $ per share, the difference between the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and the net tangible book value per share of our common stock as of December 31, 2020, after giving effect to the issuance of shares of our common stock in this offering. Furthermore, if the underwriters exercise their option to purchase additional shares, or outstanding options and warrants are exercised, you could experience further dilution. For a further description of the dilution that you will experience immediately after the offering, see the section of this prospectus captioned "Dilution."

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that equity research analysts publish about us and our business. As a newly public company, we have only limited research coverage by equity research analysts. Equity research analysts may elect not to provide research coverage of our common stock, and such lack of research coverage may adversely affect the market price of our common stock. In the event we do have equity research analyst coverage, we will not have any control over the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

Future sales of our common stock in the public market could cause our share price to fall.

Sales of a substantial number of shares of our common stock in the public market after this offering, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. Based on the number of shares of common stock outstanding as of December 31, 2020, upon the closing of this offering, we will have   shares of common stock outstanding (and no exercise of the underwriters' option to purchase additional shares from us) or   shares of common stock if the underwriters' option to purchase additional shares is exercised in full.

All of the common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act of 1933, as amended, or the Securities Act, except for any shares held by our affiliates as defined in Rule 144 under the Securities Act. The remaining   shares of common stock outstanding after this offering, based on shares outstanding as of December 31, 2020, will be restricted as a result of securities laws, lock-up agreements or other contractual restrictions that restrict transfers for at least 180 days after the date of this prospectus. The underwriters may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements with the underwriters prior to expiration of the lock-up period. For additional information, see the section of this prospectus captioned "Shares Eligible for Future Sale."

The holders of shares of common stock, representing % of our outstanding common stock on an as-converted basis as of December 31, 2020, will be entitled to rights with respect to registration of such shares under the Securities Act pursuant to an investor rights agreement between such holders and us. If such holders, by exercising their registration rights, sell a large number of shares, they could adversely affect the market price for our common stock. If we file a registration statement for the purpose of selling additional shares to raise capital, we may be required to offer these holders the right to participate in the offering and, if we are required to include shares held by these holders pursuant to the exercise of their registration rights, our ability to raise capital may be impaired.

We intend to file a registration statement on Form S-8 under the Securities Act to register shares subject to outstanding stock options issued under the Prior Plan and shares of common stock reserved for issuance under the 2021 Plan and the 2021 ESPP. Both the 2021 Plan and the 2021 ESPP provide provides for annual automatic increases in the shares reserved for issuance under the plans which could result in additional dilution to our stockholders. Once we register the issuance of shares under these plans, they can be freely sold in the public market upon issuance, subject to the vesting of the equity awards, other restrictions provided under the terms of the applicable plan or equity award, and the lock-up period with respect to this offering.

Provisions in our corporate charter documents and under Delaware law may prevent or frustrate attempts by our stockholders to change our management and hinder efforts to acquire a controlling interest in us, and the market price of our common stock may be lower as a result.

There are provisions in our certificate of incorporation and bylaws to be in effect upon the closing of this offering that may make it difficult for a third party to acquire, or attempt to acquire, control of our company, even if a change of control was considered favorable by you and other stockholders. For example, our board of directors will have the authority to issue up to shares of preferred stock. The board of directors can fix the price, rights, preferences, privileges and restrictions of the preferred stock without any further vote or action by our stockholders. The issuance of shares of preferred stock may delay or prevent a change of control transaction. As a result, the market price of our common stock and the voting and other rights of our stockholders may be adversely affected. An issuance of shares of preferred stock may result in the loss of voting control to other stockholders.

Our charter documents will also contain other provisions that could have an anti-takeover effect, including:

- only one of our three classes of directors will be elected each year;
- stockholders will not be entitled to remove directors other than by a 66 2/3% vote and only for cause;
- stockholders will not be permitted to take actions by written consent;
- stockholders cannot call a special meeting of stockholders; and
- stockholders must give advance notice to nominate directors or submit proposals for consideration at stockholder meetings.

In addition, we are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, or DGCL, which regulates corporate acquisitions by prohibiting Delaware corporations from engaging in specified business combinations with particular stockholders of those companies. These provisions could discourage potential acquisition proposals and could delay or prevent a change of control transaction. They could also have the effect of discouraging others from making tender offers for our common stock, including transactions that may be in your best interests. These provisions may also prevent changes in our management or limit the price that investors are willing to pay for our stock.

Concentration of ownership of our common stock among our existing executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

Based on their shareholdings as of March 31, 2021, our directors, executive officers and beneficial owners of greater than 5% of our outstanding stock and their respective affiliates will beneficially own, in the aggregate, approximately % of our outstanding common stock upon the closing of this offering, assuming no purchase by them of any shares in this offering. As a result, these persons, acting together, would be able to significantly influence all matters requiring stockholder approval, including the election and removal of directors, any merger, consolidation, sale of all or substantially all of our assets or other significant corporate transactions.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the estimated public offering price and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

We are an "emerging growth company" and a "smaller reporting company" and, as a result of the reduced disclosure and governance requirements applicable to emerging growth companies and smaller reporting companies, our common stock may be less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- not being required to hold a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of the last day of the fiscal year (i) following the fifth anniversary of the closing of our initial public offering, (ii) in which we have total annual gross revenue of at least $1.07 billion, or (iii) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the extended transition period to comply with new or revised accounting standards and to adopt certain of the reduced disclosure requirements available to emerging growth companies. As a result of the accounting standards election, we will not be subject to the same implementation timing for new or revised accounting standards as

other public companies that are not emerging growth companies, which may make comparison of our financials to those of other public companies more difficult. As a result of these elections, the information that we provide in this prospectus may be different than the information you may receive from other public companies in which you hold equity interests. In addition, it is possible that some investors will find our common stock less attractive as a result of these elections, which may result in a less active trading market for our common stock and higher volatility in our share price.

We are also a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended, or the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies until the fiscal year following the determination that our voting and non-voting common stock held by non-affiliates is more than $250 million measured on the last business day of our second fiscal quarter, or our annual revenues are more than $100 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is more than $700 million measured on the last business day of our second fiscal quarter.

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a return.

Our management will have broad discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Accordingly, investors will need to rely on our judgment with respect to the use of these proceeds. We intend to use the net proceeds from this offering to fund our Phase 1 clinical trial for ACU193, and to support future clinical and nonclinical activities, as well as for working capital and general corporate purposes, including the costs of operating as a public company. While we have no current agreements, commitments or understandings for any specific strategic acquisitions or in-licenses at this time, we may use a portion of the net proceeds for these purposes. For more information see, "Use of Proceeds." The failure by our management to apply these funds effectively could adversely affect our ability to continue maintaining and expanding our business. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose value.

We have never paid dividends on our capital stock and we do not intend to pay dividends for the foreseeable future. Consequently, any gains from an investment in our common stock will likely depend on whether the price of our common stock increases.

We have never declared or paid any dividends on our common stock and do not intend to pay any dividends in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the operation of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

Our failure to meet Nasdaq's continued listing requirements could result in a delisting of our common stock.

If, after listing, we fail to satisfy Nasdaq's continued listing requirements, such as the corporate governance requirements or the minimum closing bid price requirement. Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with Nasdaq's listing requirements.

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware and the U.S. federal district courts will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation, as will be in effect upon the completion of this offering, will provide that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative claim or cause of action brought on our behalf;
- any claim or cause of action asserting a breach of fiduciary duty;
- any claim or cause of action against us arising under DGCL;
- any claim or cause of action arising under or seeking to interpret our amended and restated certificate of incorporation or our amended and restated bylaws; and
- any claim or cause of action against us that is governed by the internal affairs doctrine.

The provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act.

Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation will further provide that the U.S. federal district courts will be the exclusive forum for resolving any complaint asserting a cause or causes of action arising under the Securities Act, including all causes of action asserted against any defendant to such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering.

While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

- we will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful;

- we may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law;

- we are required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification;

- we will not be obligated pursuant to our amended and restated bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees, except with respect to proceedings authorized by our board of directors or brought to enforce a right to indemnification;

- the rights conferred in our amended and restated bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons; and

- we may not retroactively amend our amended and restated bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

General Risk Factors

We will incur increased costs and demands upon management as a result of being a public company.

As a public company listed in the United States, we will incur significant additional legal, accounting and other costs. These additional costs could negatively affect our financial results. In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including regulations implemented by the Commission and Nasdaq, may increase legal and financial compliance costs and make some activities more time-consuming. These laws, regulations and standards are subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies.

We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If notwithstanding our efforts to comply with new laws, regulations and standards, we fail to comply, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

Failure to comply with these rules might also make it more difficult for us to obtain some types of insurance, including director and officer liability insurance, and we might be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on committees of our board of directors or as members of senior management.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred net operating losses (NOLs) during our history, we expect to continue to incur significant NOLs for the foreseeable future, and we may not achieve profitability prior to the time that certain of our NOLs expire. As of December 31, 2020, we had federal and state NOL carryforwards of $22.3 million and $31.0 million, respectively, that will begin expiring in the year 2028 for both federal and state NOLs if not utilized. We also have $15.9 million of federal net operating loss carryforwards as of December 31, 2020, that do not expire as a result of recent tax law changes. Our NOL carryforwards are subject to review and possible adjustment by U.S. and state tax authorities. Our NOL carryforwards could expire unused or be unavailable to offset future income tax liabilities because of their limited duration or because of restrictions under U.S. tax law. Federal NOLs generated in tax years ending on or prior to December 31, 2017 are only permitted to be carried forward for 20 taxable years under applicable U.S. federal tax law. Under the Tax Act, as modified by the Coronavirus Aid, Relief, and Economic Security Act (CARES) Act signed into law on March 27, federal NOLs arising in tax years beginning after December 31, 2017, and before January 1, 2021 may be carried back to each of the five tax years preceding the tax year of such loss, and federal NOLs arising in tax years beginning after December 31, 2020 may not be carried back. Moreover, under the Tax Act as modified by the CARES Act, federal NOLs generated in tax years ending after December 31, 2017 may be carried forward indefinitely, but the deductibility of such federal NOLs may be limited to 80% of current year taxable income for tax years beginning after December 31, 2020. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California recently imposed limits on the usability of California state NOL carryforwards to offset taxable income in taxable years beginning after 2019 and before 2023. It is generally uncertain if and to what extent various states will conform to the Tax Act or the CARES Act.

Additionally, we continue to generate business tax credits, including research and development tax credits, which generally may be carried forward to offset a portion of future taxable income, if any, subject to expiration of such credit carryforwards.

In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change” (generally defined as a cumulative change in our ownership by “5-percent shareholders” that exceeds 50 percentage points over a rolling three-year period), the corporation’s ability to use its pre-change NOLs and certain other pre-change tax attributes (such as research and development tax credits) to offset its post-change income and taxes may be limited. Similar rules may apply under state tax laws. We may have experienced such ownership changes in the past, and we may experience ownership changes in the future as a result of this offering or subsequent shifts in our stock ownership, some of which may be outside our control. We have not conducted any studies to determine annual limitations, if any, that could result from such changes in the ownership. Our ability to utilize those NOLs could be limited by an “ownership change” as described above and consequently, we may not be able to utilize a material portion of our NOLs and certain other tax attributes, which could have an adverse effect on our cash flows and results of operations.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could adversely affect our business operations and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the Tax Act enacted many significant changes to the U.S. tax laws. Future guidance from the Internal Revenue Service and other tax authorities with respect to the Tax Act may affect us, and certain aspects of the Tax Act could be repealed or modified in future legislation. Furthermore, the CARES Act modified certain provisions of the Tax Act. In addition, it is uncertain if and to what extent various states will conform to the Tax Act or any newly enacted federal tax legislation. Changes in corporate tax rates, the realization of net deferred tax assets relating to our operations, the taxation of foreign earnings, and the deductibility of expenses under the Tax Act or future reform legislation could have a material impact on the value of our deferred tax assets, could

result in significant one-time charges, and could increase our future U.S. tax expense. Among the changes made by the Tax Act was a reduction of the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions generally referred to as "orphan drugs." We continue to examine the impact this tax reform legislation may have on our business. We urge investors to consult with their legal and tax advisers regarding the implications of the Tax Act and potential changes in U.S. tax laws on an investment in our common stock.

Our business and operations would suffer in the event of computer system failures, cyberattacks or a deficiency in our cybersecurity or a natural disaster.

Despite the implementation of security measures, our internal computer systems, and those of third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyberattacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization. The risk of a security breach or disruption, particularly through cyberattacks or cyber intrusion, including by computer hackers, foreign governments, and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product development programs. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur material legal claims and liability and damage to our reputation, and the further development of our product candidates could be delayed.

Disruptions at the FDA, the Commission and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the Commission and other government agencies on which our operations may rely, including those that fund research and development activities, is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs or biologics to be reviewed and approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including most recently from December 22, 2018 to January 25, 2019, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

FDA and regulatory authorities outside the United States may adopt policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities. In response to the COVID-19 pandemic, on March 10, 2020 the FDA announced its intention to postpone most inspections of foreign manufacturing facilities and products while local, national and international conditions warrant. On March 18, 2020, the FDA announced its intention to temporarily postpone routine surveillance inspections of domestic manufacturing facilities and provided guidance regarding the conduct of clinical trials, which the FDA continues

to update. As of June 23, 2020, the FDA noted it was continuing to ensure timely reviews of applications for medical products during the COVID-19 pandemic in line with its user fee performance goals and conducting mission critical domestic and foreign inspections to ensure compliance of manufacturing facilities with FDA quality standards. As of July 2020, utilizing a rating system to assist in determining when and where it is safest to conduct such inspections based on data about the virus' trajectory in a given state and locality and the rules and guidelines that are put in place by state and local governments, FDA is either continuing to, on a case-by-case basis, conduct only mission critical inspections, or, where possible to do so safely, resuming prioritized domestic inspections, which generally include pre-approval inspections. Foreign pre-approval inspections that are not deemed mission-critical remain postponed, while those deemed mission-critical will be considered for inspection on a case-by-case basis. FDA will use similar data to inform resumption of prioritized operations abroad as it becomes feasible and advisable to do so. The FDA may not be able to maintain this pace and delays or setbacks are possible in the future. Should FDA determine that an inspection is necessary for approval, and an inspection cannot be completed during the review cycle due to restrictions on travel, FDA has stated that it generally intends to issue a complete response letter. Further, if there is inadequate information to make a determination on the acceptability of a facility, FDA may defer action on the application until an inspection can be completed. Additionally, regulatory authorities outside the U.S. may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities.

If a prolonged government shutdown occurs, or if global health concerns prevent the FDA or other regulatory authorities from conducting business as usual or conducting inspections, reviews or other regulatory activities, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. Portions of our future clinical trials may be conducted outside of the United States and unfavorable economic conditions resulting in the weakening of the U.S. dollar would make those clinical trials more costly to operate. Furthermore, a severe or prolonged economic downturn, including a recession or depression resulting from the current COVID-19 pandemic or political disruption could result in a variety of risks to our business, including weakened demand for our product candidates or any future product candidates, if approved, and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy or political disruption, including any international trade disputes, could also strain our manufacturers or suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our potential products. Any of the foregoing could seriously harm our business, and we cannot anticipate all of the ways in which the political or economic climate and financial market conditions could seriously harm our business.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections titled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Business" and elsewhere in this prospectus. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "estimate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions intended to identify statements about the future. These statements speak only as of the date of this prospectus and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements include, without limitation, statements about the following:

- the sufficiency of our existing cash and cash equivalents to fund our future operating expenses and capital expenditure requirements;
- our ability to obtain funding for our operations, including funding necessary to develop and commercialize ACU193, subject to necessary regulatory approvals;
- the ability of our clinical trials to demonstrate the safety and efficacy of ACU193, and other positive results;
- the success, cost and timing of our development activities, nonclinical studies and clinical trials;
- the timing and focus of our future clinical trials, and the reporting of data from those trials;
- our plans relating to commercializing ACU193, subject to obtaining necessary regulatory approvals;
- our ability to attract and retain key scientific and clinical personnel;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- our reliance on third parties to conduct clinical trials of ACU193, and for the manufacture of ACU193 for nonclinical studies and clinical trials;
- the success of competing therapies that are or may become available;
- our plans and ability to obtain or protect our intellectual property rights, including extensions of existing patent terms where available;
- the scope of protection we are able to establish and maintain for intellectual property rights covering ACU193 and technology;
- potential claims relating to our intellectual property;
- existing regulations and regulatory developments in the United States and other jurisdictions;

- our ability to obtain and maintain regulatory approval of ACU193, and any related restrictions, limitations and/or warnings in the label of any approved product candidate;
- our plans relating to the further development and manufacturing of ACU193, including additional therapeutic indications which we may pursue;
- our financial performance;
- the effects of the COVID-19 pandemic; and
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act.

In addition, you should refer to the "Risk Factors" section of this prospectus for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Other sections of this prospectus may include additional factors that could harm our business and financial performance. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. You should, however, review the factors and risks and other information we describe in the reports we will file from time to time with the SEC after the date of this prospectus.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, the events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

MARKET AND INDUSTRY DATA

We obtained the industry, statistical and market data included in this prospectus from our own internal estimates and research as well as from industry and general publications and research, surveys and studies conducted by third parties. All of the market data used in this prospectus involve a number of assumptions and limitations, and the sources of such data cannot guarantee the accuracy or completeness of such information. While we are not aware of any misstatements regarding the third-party information and we believe that each of these studies and publications is reliable, the industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of important factors, including those described in the section titled “Risk Factors.” These and other factors could cause results to differ materially from those expressed in the estimates made by third parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of shares of our common stock in this offering will be approximately $ million (or approximately $ million if the underwriters exercise in full their option to purchase up to additional shares), assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the net proceeds to us from this offering by $ million, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, assuming the assumed initial public offering price stays the same. We do not expect that a change in the offering price or the number of shares by these amounts would have a material effect on our intended uses of the net proceeds from this offering, although it may impact the amount of time prior to which we may need to seek additional capital.

As of December 31, 2020, we had cash and cash equivalents of $43.8 million. We intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $ million to ;
- approximately $ million to ; and
- the remainder for working capital and other general corporate purposes.

We may also use a portion of the remaining net proceeds to in-license, acquire or invest in complementary businesses, technologies, products or assets, although we have no current agreements, commitments or understandings to do so.

We believe that the net proceeds of this offering, together with our existing cash and cash equivalents, will enable us to fund our operations through . Based on our current operational plans and assumptions, we expect the net proceeds from this offering, together with our cash and cash equivalents, will be sufficient to . We have based these estimates on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we expect.

This expected use of net proceeds from this offering and our existing cash and cash equivalents represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for ACU193 and any other product candidates we develop, and any unforeseen cash needs.

Our management will have broad discretion in the application of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of those net proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. Pending their use, we plan to invest the net proceeds from this offering in short-term, interest bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States.

DIVIDEND POLICY

We have never declared or paid, and do not anticipate declaring or paying, in the foreseeable future, any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2020:

- on an actual basis;
- on a pro forma basis to give effect to the conversion of all of the outstanding preferred shares of our convertible preferred stock into an aggregate of shares of our common stock upon the closing of this offering, as well as the automatic exercise and conversion of an outstanding preferred stock warrant into shares of our common stock and the settlement of the preferred stock tranche rights liability, as if such conversions had occurred on December 31, 2020; and
- on a pro forma as adjusted basis to give further effect our issuance and sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us.

Our capitalization following the closing of this offering will depend on the actual initial public offering price and other terms of this offering determined at pricing. You should read this information in conjunction with our financial statements and the related notes appearing at the end of this prospectus, the section of this prospectus titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and other financial information contained in this prospectus.

	As of December 31, 2020		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data)		
Cash and cash equivalents	$ 43,777	$	$
Preferred stock tranche rights liability	$ 5,033	$	$
Preferred stock warrant liability	380		
Series A convertible preferred stock, $0.0001 par value; 711,203 shares authorized, 711,203 issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	1,067		
Series A-1 convertible preferred stock, $0.0001 par value; 11,898,177 shares authorized, 11,231,511 shares issued and outstanding, actual; no shares authorized, issued or outstanding pro forma and pro forma as adjusted	16,333		
Series B convertible preferred stock, $0.0001 par value; 29,457,450 shares authorized, 17,674,469 shares issued and outstanding, no shares authorized, issued or outstanding pro forma and pro forma as adjusted	39,253		
Stockholders’ (deficit) equity:			
Preferred stock, $0.0001 par value; no shares authorized, issued or outstanding, actual; shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—		

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	As of December 31, 2020		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data)		
Common stock, $0.0001 par value; 50,500,000 shares authorized, 624,635 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	—		
Additional paid-in capital	8,374		
Accumulated (deficit) equity	(26,965)		
Total stockholders' (deficit) equity	(18,591)		
Total capitalization	$ 43,475	$	$

(1) Each $1.00 increase or decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares in the number of shares offered by us at the assumed initial public offering price per share of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of additional paid-in capital, total stockholders' deficit and total capitalization by approximately $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions, and estimated offering expenses payable by us.

The number of shares of our common stock outstanding in the table above excludes:

- 1,492,303 shares of our common stock issuable upon the exercise of options under the Prior Plan outstanding as of December 31, 2020 at a weighted-average exercise price of $0.76 per share;
- shares of our common stock issuable upon the exercise of options under the Prior Plan granted subsequent to December 31, 2020, at a weighted-average exercise price of $;
- 574,760 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of December 31, 2020 at an exercise price of $3.00;
- shares of our common stock reserved for future issuance under the Prior Plan, which shares will cease to be available for issuance at the time the 2021 Plan becomes effective and will be added to, and become available for issuance under, the 2021 Plan;
- shares of our common stock reserved for future issuance under our 2021 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the 2021 Plan; and
- shares of our common stock reserved for future issuance under the ESPP, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the ESPP.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial public offering price per share and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

As of December 31, 2020, we had a historical net tangible book value (deficit) of $ million, or $ per share of common stock. Our historical net tangible book value (deficit) per share represents total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of December 31, 2020.

Our pro forma net tangible book value as of December 31, 2020 was $ million, or $ per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to the conversion of all of the outstanding preferred shares of our convertible preferred stock into an aggregate of shares of our common stock upon the closing of this offering, as well as the automatic exercise and conversion of an outstanding preferred stock warrant into shares of our common stock (based on assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus), as if such conversions had occurred on December 31, 2020. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of December 31, 2020, after giving effect to the pro forma adjustment described above.

After giving further effect to the sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2020 would have been $ million, or $ per share. This amount represents an immediate increase in pro forma net tangible book value of $ per share to our existing stockholders and immediate dilution of $ per share to new investors in this offering. We determine dilution by subtracting the pro forma as adjusted net tangible book value per share after this offering from the amount of cash that a new investor paid for a share of common stock in this offering.

The following table illustrates this dilution:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of December 31, 2020	$	
Pro forma increase in net tangible book value (deficit) per share attributable to the pro forma transactions described above		
Pro forma net tangible book value per share as of December 31, 2020		
Increase in pro forma as adjusted net tangible book value per share attributable to new investors participating in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors participating in this offering		$

The dilution information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted net tangible book value per share after this offering by $, and dilution in pro forma net tangible book value per share to new investors by $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and

estimated offering expenses payable by us. An increase of 1.0 million shares in the number of shares we are offering would increase the pro forma as adjusted net tangible book value per share after this offering by $ and decrease the dilution per share to new investors participating in this offering by $, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A decrease of 1.0 million shares in the number of shares we are offering would decrease the pro forma as adjusted net tangible book value per share after this offering by $ and increase the dilution per share to new investors participating in this offering by $, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares of our common stock in full, the pro forma as adjusted net tangible book value after this offering would be $ per share, the increase in pro forma net tangible book value would be $ per share and the dilution to new investors would be $ per share, in each case assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

The following table summarizes, as of December 31, 2020, on the pro forma as adjusted basis described above, the differences between the number of shares purchased from us, the total consideration paid to us in cash and the average price per share that existing stockholders and new investors paid for such shares. This calculation is based on an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Total Shares		Total Consideration		Weighted-Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders		%	$	%	$
New investors					
Total		100%		$ 100%	

The foregoing tables and calculations are based on the number of shares of our common stock outstanding as of December 31, 2020, after giving effect to the conversion of all of the outstanding preferred shares of our convertible preferred stock into an aggregate of shares of our common stock upon the closing of this offering, as well as the automatic exercise and conversion of an outstanding preferred stock warrant into shares of our common stock (based on assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus), as if such conversions had occurred on December 31, 2020, and excludes:

- 1,492,303 shares of our common stock issuable upon the exercise of options under the Prior Plan outstanding as of December 31, 2020 at a weighted-average exercise price of $0.76 per share;
- shares of our common stock issuable upon the exercise of options under the Prior Plan granted subsequent to December 31, 2020, at a weighted-average exercise price of $;
- 574,760 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of December 31, 2020 at an exercise price of $3.00;
- shares of our common stock reserved for future issuance under the Prior Plan, which shares will cease to be available for issuance at the time the 2021 Plan becomes effective and will be added to, and become available for issuance under, the 2021 Plan;

- shares of our common stock reserved for future issuance under our 2021 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the 2021 Plan; and

- shares of our common stock reserved for future issuance under the ESPP, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the ESPP.

To the extent that stock options or warrants are exercised, new stock options or other equity awards are issued under our equity incentive plan or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with our financial statements and related notes included elsewhere in this prospectus. This discussion and analysis and other parts of this prospectus contain forward-looking statements based upon current beliefs that involve risks, uncertainties and assumptions, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results and the timing of selected events could differ materially from those described in or implied by these forward-looking statements as a result of several factors, including those set forth under "Risk Factors" and elsewhere in this prospectus. You should carefully read the "Risk Factors" section of this prospectus to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements. Please also see the section entitled "Special Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biopharmaceutical company developing a novel disease-modifying approach to target what we believe to be a key underlying cause of Alzheimer's disease (AD). Alzheimer's disease is a progressive neurodegenerative disease of the brain that leads to loss of memory and cognitive functions and ultimately results in death. Our scientific founders pioneered research on soluble amyloid-beta oligomers (AbOs), globular assemblies of the amyloid-beta (Ab) peptide that are distinct from other forms of Ab and amyloid. We are currently focused on advancing a targeted immunotherapy drug candidate, ACU193, through clinical proof of mechanism in early AD patients. We initiated our Phase 1 clinical trial of ACU193 in the second quarter of 2021.

We were incorporated in 1996 and were party to an exclusive license and research collaboration with Merck in 2003. Although we acquired the exclusive rights to ACU193 from Merck in 2011 following Merck's strategic decision to focus its AD development efforts on a different product candidate, we did not recommence meaningful operations until we completed our first institutional fundraising in 2018. Since 2018, we have devoted substantially all of our efforts to organizing and staffing our company, business planning, raising capital, conducting discovery, research and development activities, and providing general and administrative support for these operations. We do not have any products approved for sale and have not generated any revenue from product sales. We have funded our operations primarily through the sale of our convertible preferred stock and common stock, the issuance of notes, grant revenue and during our collaboration with Merck, certain payments received under our collaboration agreement.

From inception through December 31, 2020, we have raised an aggregate of $67.5 million of gross proceeds through the issuance of convertible preferred stock, as well as sales of common stock and issuance of notes that were converted to preferred stock, with the vast majority of this capital being raised since our Series A-1 convertible preferred stock, or Series A-1, financing in 2018. In 2020, we conducted a Series B convertible preferred stock, or Series B, financing, with the funding to occur in two tranches. We closed the first tranche of the Series B financing in November 2020, selling 17,674,469 shares of Series B at $2.55 per share for gross proceeds of $45.1 million. We are obligated to issue and sell additional shares of Series B in the second tranche, in the aggregate amount of $30.0 million to the Series B purchasers upon the achievement of a certain defined clinical milestone. The determination as to whether the milestone event has been met is subject to certification by our board of directors and the holders of 67% of the outstanding Series B.

We have incurred net losses and negative cash flows from operations since our inception. Our net loss for the year ended December 31, 2020 was $7.3 million and as of December 31, 2020, we had an accumulated deficit of $27.0 million. Our net losses and cash flows from operations may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of nonclinical studies, clinical trials and our expenditures on other research and development activities. We expect our expenses and operating losses will increase substantially for the foreseeable future as we advance ACU193 into clinical trials, seek to expand our product candidate portfolio

through developing additional product candidates, grow our clinical, regulatory and quality capabilities, and incur additional costs associated with operating as a public company. It is likely that we will seek third-party collaborators for the future commercialization of ACU193 or any other product candidate that is approved for marketing. However, we may seek to commercialize our products at our own expense, which would require us to incur significant additional expenses for marketing, sales, manufacturing and distribution.

In March 2020, the World Health Organization declared COVID-19 a global pandemic and the United States declared a national emergency with respect to COVID-19. In response to the COVID-19 pandemic, a number of governmental orders and other public health guidance measures have been implemented across much of the United States, including in the locations of our office, clinical trial sites and third parties on whom we rely. We implemented a work-from-home policy allowing employees and consultants who can work from home to do so. Business travel has been limited, and online video and teleconference technology is used to meet virtually rather than in person. We have taken measures to secure our research and development activities, while work in laboratories by our partners has been organized to reduce risk of COVID-19 transmission. Although to date, our business has not been materially impacted by COVID-19, it is possible that our clinical development timelines could be negatively affected by COVID-19, which could materially and adversely affect our business, financial condition and results of operations.

We will not generate revenue from product sales unless and until we successfully complete clinical development and obtain regulatory approval for our product candidates. In addition, if we obtain regulatory approval for our product candidates and do not enter into a third-party commercialization partnership, we expect to incur significant expenses related to developing our commercialization capability to support product sales, marketing, manufacturing and distribution activities.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity offerings and debt financings or other sources, such as potential collaboration agreements, strategic alliances and licensing arrangements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on acceptable terms, or at all. Our failure to raise capital or enter into such agreements as, and when needed, could have a material adverse effect on our business, results of operations and financial condition.

As of December 31, 2020, we had cash and cash equivalents of $43.8 million. Without giving effect to the second tranche of the Series B financing, or the anticipated net proceeds from this offering, based on our current operating plan, we believe we have sufficient cash and cash equivalents on hand to support current operations through the third quarter of 2022. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See “—Liquidity and capital resources.”

Components of our Results of Operations

Grants and Other Revenue

To date, we have not generated any revenues from the commercial sale of any products, and we do not expect to generate revenues from the commercial sale of any products for the foreseeable future, if ever. For the years ended December 31, 2019 and 2020, we derived revenue from a grant awarded by the National Institutes of Health in September 2017 and renewed annually in 2018 through 2020. The grant provides us with funding to support the completion of preclinical chemistry, manufacturing and control studies, toxicology and pharmacokinetic studies, submit an IND dossier to the FDA, and then conduct first in human clinical safety trials for ACU193. We recognize revenue from this grant when the related costs are incurred and the right to payment is realized. As of December 31, 2020, we have been awarded a total of $3.9 million under this grant, all of which has been recognized as revenue prior to or during the years ended December 31, 2019 and 2020.

Operating Expenses

Our operating expenses consist of (i) research and development expenses and (ii) general and administrative expenses.

Research and Development Expenses

Research and development costs primarily consist of direct costs associated with consultants and materials, biologic storage, third party, contract research organization costs and contract development and manufacturing expenses, salaries and other personnel-related expenses. Research and development costs are expensed as incurred. More specifically, these costs include:

- costs of funding research performed by third parties that conduct research and development and nonclinical and clinical activities on our behalf;
- costs of manufacturing drug supply and drug product;
- costs of conducting nonclinical studies and clinical trials of our product candidates;
- consulting and professional fees related to research and development activities, including equity-based compensation to non-employees;
- costs related to compliance with clinical regulatory requirements; and
- employee-related expenses, including salaries, benefits and stock-based compensation expense for our research and development personnel.

Costs for certain activities are recognized based on an evaluation of the progress to completion of specific tasks using data such as information provided to us by our vendors and analyzing the progress of our nonclinical and clinical studies or other services performed. Significant judgment and estimates are made in determining the accrued expense balances at the end of any reporting period. Advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered or the services rendered.

As we currently only have one product candidate, ACU193, in development, we do not separately track expenses by program. Further, as we have historically relied exclusively on consultants for research and development activities, we did not have any material internal research and development costs for the years ended December 31, 2019 and 2020.

We expect that our research and development expenses will increase substantially in connection with our clinical development activities for our ACU193 program. At this time, we cannot accurately estimate or know the nature, timing and costs of the efforts that will be necessary to complete the clinical development of, or obtain regulatory approval for, any of our current or future product candidates. This is due to the numerous risks and uncertainties associated with product development and commercialization, including the following:

- our ability to add and retain key research and development personnel;
- our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize our product candidates;
- our successful enrollment in and completion of clinical trials, including our ability to generate positive data from any such trials;

- the size and cost of any future clinical trials for existing or future product candidates in our pipeline;
- the costs associated with the development of any additional programs we identify in-house or acquire through collaborations and other arrangements and the success of such collaborations;
- the terms and timing of any additional collaborations, license or other arrangement, including the timing of any payments thereunder;
- our ability to establish and maintain agreements and operate with third-party manufacturers for clinical supply for our clinical trials and commercial manufacturing, if any of our product candidates are approved;
- costs related to manufacturing of our product candidates or to account for any future changes in our manufacturing plans;
- our ability to obtain and maintain patents, trade secret and other intellectual property protection and regulatory exclusivity for our product candidates, both in the United States and internationally;
- our ability to obtain and maintain third-party insurance coverage and adequate reimbursement for our product candidates, if and when approved;
- the acceptance of our product candidates, if approved, by patients, the medical community and third-party payors;
- effectively competing with other products if our product candidates are approved;
- the impact of any business interruptions to our operations, including the timing and enrollment of patients in our planned clinical trials, or to those of our manufacturers, suppliers, or other vendors resulting from the COVID-19 pandemic or similar public health crisis; and
- our ability to maintain a continued acceptable safety profile for our therapies following approval.

A change in the outcome of any of these variables with respect to the development of our product candidates could significantly change the costs and timing associated with the development of that product candidate. We may never succeed in obtaining regulatory approval for any of our product candidates.

General and Administrative Expenses

General and administrative expenses consist primarily of management and business consultants and other related costs, including stock-based compensation. General and administrative expenses also include board of directors’ expenses and professional fees for legal, patent, consulting, accounting, auditing, tax services and insurance costs.

We expect that our general and administrative expenses will increase as our organization and headcount needed in the future grows to support continued research and development activities and potential commercialization of our product candidates. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, attorneys and accountants, among other expenses. Additionally, we expect to incur increased expenses associated with being a public company, including costs of additional personnel, accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and Securities and Exchange Commission, or SEC, requirements, director and officer insurance costs, and investor and public relations costs.

Other Income (Expense)

Other income (expense) primarily includes changes in fair value of the Series A-1 warrant liability and the Series B tranche rights and interest income, net.

The Series A-1 warrant was issued in October 2018 in connection with the Series A-1 preferred financing. The warrant liability met the definition of a freestanding financial instrument, as it was legally detachable and separately exercisable from the initial closing of the Series A-1 convertible preferred stock. The warrant liability was initially recorded at fair value as a liability on our balance sheet and was subsequently re-measured at fair value at the end of each reporting period. The changes in the fair value were recognized as a component of other income (expense).

Included in the terms of the Series B stock purchase agreement in November 2020 were tranche rights granted to the holders of the Series B. The tranche rights provide the Series B holders with the right to purchase additional shares of Series B at $2.55 per share in an additional tranche after the achievement of a certain milestone event. Alternatively, any time after the initial closing, the Series B investors may elect to purchase the additional shares even if the milestone event has not yet been achieved by notifying us of their election to do so. The tranche rights met the definition of a freestanding financial instrument as the tranche rights are legally detachable and separately exercisable from the Series B. The tranche rights were initially recorded at fair value as a liability on our balance sheet. The tranche rights are subsequently re-measured at fair value at the end of each reporting period and at settlement. Changes in the fair value are recognized as a component of other income (expense).

Results of Operations

Comparison of the Years Ended December 31, 2019 and 2020

The following table summarizes our results of operations for the years ended December 31, 2019 and 2020 (in thousands):

	For the Year Ended December 31,		
	2019	2020	Change
Grant and other revenue	$ 1,697	$ 1,436	$ (261)
Costs and operating expenses:			
Research and development	8,576	7,997	(579)
General and administrative	926	1,351	425
Total operating expenses	9,502	9,348	(154)
Loss from operations	(7,805)	(7,912)	(107)
Other income (expense)			
Interest income	45	1	(44)
Change in fair value of preferred stock tranche rights liability and preferred stock warrant liability	(147)	586	733
Total other income (expense)	(102)	587	689
Net loss	$ (7,907)	$ (7,325)	$ 582

Grant and Other Revenue

Revenue related to our NIH grant was $1.7 million and $1.4 million for the years ended December 31, 2019 and 2020, respectfully, and was recognized when the related costs were incurred and the right to payment was realized.

Research and Development Expenses

Research and development expenses were $8.6 million and $8.0 million for the years ended December 21, 2019 and 2020, respectively. The $0.6 million decrease was primarily due to decreases for nonclinical materials and consulting costs of $1.9 million and $0.4 million, respectively; net of increases for contract research organizations and drug safety testing of $1.0 million and $0.6 million, respectively, due to our progression towards and submission of our IND to the FDA in the fourth quarter of 2020.

General and Administrative Expenses

General and administrative expense was $0.9 million and $1.4 million for the years ended December 31, 2019 and 2020, respectively. The $0.4 million increase was primarily due to higher executive compensation and increased business development consulting costs, as well as increased franchise taxes and accounting expenses.

Other Income (Expense)

Other income (expense) increased by $0.7 million due to a total gain of $0.6 million related to decreases in the fair value of both the Series A-1 warrant liability and the Series B tranche liability for the year ended December 31, 2020, as compared to a $0.1 million increase in the fair value of the Series A-1 warrant liability for the year ended December 31, 2019.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have funded our operations primarily through the sale of our convertible preferred stock and common stock, the issuance of notes, grant revenue and, during our collaboration with Merck, certain payments received under our collaboration agreement. We do not have any products approved for sale and have not generated any revenue from product sales. From inception through December 31, 2020, we have raised an aggregate of $67.5 million of gross proceeds through the issuance of convertible preferred stock, as well as sales of common stock and issuance of notes that were converted to preferred stock, with the vast majority of this capital being raised since our Series A-1 financing in 2018. In 2020, we conducted a Series B financing, with the funding to occur in two tranches. We closed the first tranche of the Series B financing in November 2020 for gross proceeds of $45.1 million. Upon achievement of a certain milestone event for ACU193, or upon election of the Series B investors to waive the requirement for the milestone event to be achieved prior to its achievement, we are obligated to issue and sell a second tranche of Series B shares to the Series B purchasers for gross proceeds of $30.0 million. As of December 31, 2020, our cash and cash equivalents totaled $43.8 million.

Cash Flows

The following table summarizes our sources and uses of cash for the years ended December 31, 2019 and 2020 (in thousands):

	For the Year Ended December 31,		
	2019	2020	Change
Net cash used in operating activities	$ (6,818)	$ (7,450)	$ (632)
Net cash provided by financing activities	6,239	44,675	38,436
Net change in cash and cash equivalents	$ (579)	$ 37,225	$37,804

Operating Activities

Net cash used in operating activities was $6.8 million and $7.5 million for the years ended December 31, 2019 and 2020, respectively. Net cash used in operating activities in 2019 was primarily due to our net loss of $7.9 million, which was partially offset by an increase in accrued liabilities and accounts payable of $0.6 million. In 2020, net cash used in operating activities was primarily due to our net loss of $7.3 million and income from the change in the fair values of the Series A-1 warrant liability and the Series B tranche liability, which totaled $0.6 million; partially offset by changes in our working capital, partially offset by $0.3 million increase in accounts payable and a $0.1 million decrease in long-term prepaid service agreements.

Financing Activities

Net cash provided by financing activities was $6.2 million and $44.7 million for the years ended December 31, 2019 and 2020, respectively, and was due to the issuance of Series A-1 convertible preferred stock in 2019 and Series B in 2020.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue our research and development, conduct clinical trials, and seek marketing approval for our current and any of our future product candidates. Furthermore, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company. It is likely that we will seek third-party collaborators for the future commercialization of ACU193 or any other product candidate that is approved for marketing. However, we may seek to commercialize our products at our own expense, which would require us to incur significant additional expenses for marketing, sales, manufacturing and distribution., which costs we may seek to offset through entry into collaboration agreements with third parties. As a result, we expect that we will need to obtain substantial additional funding in connection with our future operations. If we are unable to raise capital when needed or on acceptable terms, we could be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents as of December 31, 2020, will enable us to fund our operating expenses and capital expenditure requirements through   . We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of discovery, nonclinical development, laboratory testing and clinical trials for other potential product candidates we may develop, if any;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under the Series B agreement or any collaboration agreements we might have at such time;
- the costs and timing of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;

- the costs of preparing, filing and prosecuting patent applications, obtaining, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- our headcount growth and associated costs as we expand our business operations and our research and development activities; and
- the costs of operating as a public company.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interests may be diluted, and the terms of these securities may include liquidation or other preferences that could adversely affect your rights as a common stockholder. Any debt financing, if available, may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Off-Balance Sheet Arrangements

During the periods presented we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

Contractual Obligations

As of December 31, 2020, we have an operating lease obligation associated with a lease for our executive office space that totals approximately $3,000 for the remainder of the lease term. This amount is due in equal monthly installments over the remaining lease term, which expires on August 31, 2021.

We have been subleasing space in Indiana since March 1, 2020 under a lease that expired on December 31, 2020. We executed a new sublease for this space that was effective February 1, 2021. The term of the sublease is for 31 months, expiring on August 30, 2023. We pay monthly rent of $12,719 and we are also allowing others to sublease a portion of the space from us for less than a one-year period.

We enter into contracts in the normal course of business with CROs and CMOs for clinical trials, nonclinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts do not contain any minimum purchase commitments and are generally cancelable by us upon prior notice of 30 days. Payments due upon cancelation consist only of payments for services provided and expenses incurred up to the date of cancelation.

Critical Accounting Estimates and Policies

This management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent

assets and liabilities in our financial statements. In accordance with U.S. GAAP, we evaluate our estimates and judgments on an ongoing basis, including those related to accrued expenses, the preferred stock tranche and warrant liabilities and stock-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We define our critical accounting policies as those accounting principles that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our financial condition and results of operations, as well as the specific manner in which we apply those principles. While our significant accounting policies are more fully described in Note 2 to our audited financial statements appearing elsewhere in this prospectus, we believe the following are the critical accounting policies used in the preparation of our financial statements that require significant estimates and judgments.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, identifying services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced. Since our inception, we have not experienced any material differences between accrued or prepaid costs and actual costs.

We base our expenses related to research and development activities on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Stock-based Compensation

Stock-based compensation expense represents the grant date fair value of equity awards recognized in the period using the Black-Scholes option pricing model. We recognize the expense for equity awards on a straight-line basis over the requisite service periods of the awards, which is usually the vesting period. Forfeitures are recognized as they occur.

Estimating the fair value of equity awards pursuant to the Black-Scholes option pricing model requires us to make assumptions regarding a number of variables, including the risk-free interest rate, the expected stock price volatility, the expected term of stock options, the expected dividend yield and the fair value of the underlying common stock on the date of grant. Changes in these assumptions can materially affect the fair value and ultimately how much stock-based compensation expense is recognized.

The Black-Scholes option pricing model utilizes inputs which are highly subjective assumptions and generally require significant judgment. We determine these assumptions in the following manner:

- ***Fair Value of Common Stock.*** See the subsection titled "—Common Stock Valuations" below.

- ***Expected Term.*** The expected term of stock options represents the period of time that the awards are expected to be outstanding. Because we do not have sufficient historical exercise behavior, we determine the expected term assumption using the simplified method, which calculates the expected term as the average time-to-vesting and the contractual life of the award.

- ***Expected Volatility.*** As we are not yet a public company and do not have a trading history for our common stock, the expected volatility assumption was determined by examining the historical volatilities of a group of industry peers whose share prices are publicly available.

- ***Risk-Free Interest Rate.*** The risk-free rate assumption is based on the U.S. Treasury yield in effect at the time of the grant with maturities consistent with the expected term of the awards.

- ***Expected Dividend Yield.*** The expected dividend yield assumption is based on our history and expectation of dividend payouts. The Company has not paid and does not intend to pay dividends and, therefore, used an expected dividend yield of zero.

See Note 6 to our financial statements included elsewhere in this prospectus for more information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options. Certain of such assumptions involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation could be materially different.

We recorded stock-based compensation expense of $0.2 million for each of the years ended December 31, 2019 and 2020. As of December 31, 2020, there was $0.1 million of total unrecognized stock-based compensation expense related to unvested stock options which we expect to recognize over a remaining weighted-average period of one year. We expect to continue to grant stock options and other equity-based awards in the future, and to the extent that we do, our stock-based compensation expense recognized in future periods will likely increase.

On January 4, 2021, we granted options to purchase an aggregate of 3,694,711 shares of common stock to certain employees, directors, advisors and consultants with an exercise price per share of $0.80.

Fair Value of Common Stock

The fair values of the shares of common stock underlying our options were estimated on each grant date by our board of directors. In order to determine the fair value, our board of directors considered, among other things, contemporaneous valuations of our common stock prepared by unrelated third-party valuation firms in accordance with the guidance provided by the American Institute of Certified Public Accountants Audit and Accounting Practice Aid Series: Valuation of Privately-Held-Company Equity Securities Issued as Compensation, or the Practice Aid. Given the absence of a public trading market of our capital stock, our board of directors will exercise reasonable judgment and consider a number of objective and subjective factors to determine the best estimate of the fair value of our common and preferred stock, including:

- contemporaneous third-party valuations of our common stock;

- the prices, rights, preferences and privileges of our convertible preferred stock relative to our common stock;

- our business, financial condition and results of operations, including related industry trends affecting our operations;
- the likelihood of achieving a liquidity event, such as an initial public offering or sale of our company, given prevailing market conditions;
- the lack of marketability of our common stock;
- U.S. and global economic and capital market conditions and outlook.

The valuations prepared as of December 31, 2018, December 31, 2019, November 20, 2020 and December 31, 2020 resulted in a valuation of our common stock of $0.48, $0.56, $0.67 and $0.56 per share, respectively, as of those dates.

Common Stock Valuation Methodology

In determining the estimated fair value of common stock, our board of directors considered the subjective factors discussed above in conjunction with the most recent valuations of our common stock that were prepared by an independent third-party.

In estimating the fair market value of our common stock, our board of directors first determined the equity value of our business using accepted valuation methods. For valuations as of December 31, 2018, December 31, 2019, November 20, 2020 and December 31, 2020 we used the option-pricing model, or OPM, under which shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the preferred and common stock are inferred by analyzing these options. Specifically, we use the OPM backsolve method to estimate the fair value of our common stock, which derives the implied equity value for one type of equity security from a contemporaneous transaction involving another type of security, such as the shares of our Series A, Series A-1 and Series B convertible preferred stock. We used the OPM backsolve method because we were at an early stage of development and future liquidity events were difficult to forecast. We applied a discount for lack of marketability to account for a lack of access to an active public market.

Preferred Stock Tranche Rights Liability

We determined that our obligation to issue, and the investors' right to purchase, additional shares of Series B pursuant to the milestone closings represent a freestanding financial instrument, or the tranche liability. The tranche liability was initially recorded at fair value. The proceeds from the sale of the convertible preferred stock are first allocated to the fair value of the tranche liability, with the remaining proceeds from the sale of the convertible preferred stock allocated to the Series B convertible preferred stock. The tranche liability is remeasured at each reporting period and upon the exercise or expiration of the obligation, with gains and losses arising from subsequent changes in its fair value recognized as a component of other income (expense) in the statement of operations. At the time of the exercise or expiration of the tranche liability, any remaining value of the tranche liability is reclassified to convertible preferred stock on the balance sheet.

We estimated the fair value of the tranche liability using the OPM backsolve method at the initial issuance date. As of November 20, 2020, the simulations occurred based on our implied aggregate equity value derived from the Series B convertible preferred stock offering price of $2.55 per share, along with, in part, the following subjective assumptions: risk-free rate of 0.16%, an expected volatility of 90%, the expected term to a liquidity event of 2.1 years and a 70% probability of achieving the milestone event and timing thereof. Subsequently, we estimated the fair value of the tranche liability using an OPM backsolve approach at December 31, 2020, which was calculated based on our aggregate equity value derived from the Series B convertible preferred stock offering price of $2.55 per share. The subsequent remeasurement also considered, in part, a risk-free rate of 0.13%, an expected volatility of 90%, the expected term to a liquidity event of 2.0 years and a 65% probability of achieving the milestone event.

Preferred Stock Warrant Liability

We determined that the warrant liability met the definition of a freestanding financial instrument, as it was legally detachable and separately exercisable from the initial closing of the Series A-1 convertible preferred stock. The warrant liability is remeasured at each reporting period until the earlier of the exercise or expiration of the applicable warrant, with gains and losses arising from subsequent changes in its fair value recognized in other income (expense) in the statement of operations. At the time of the exercise or expiration of the warrant liability, any remaining value of the warrant liability is reclassified to convertible preferred stock on the balance sheet.

We estimated the initial and subsequent fair values of the warrant liability at the end of each reporting period using the OPM backsolve method.

Recent Accounting Pronouncements

See Note 2 to our financial statements included elsewhere in this prospectus for information about recent accounting pronouncements, the timing of their adoption, and our assessment, if any, of their potential impact on our financial condition and results of operations.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk related to changes in interest rates. As of December 31, 2019 and 2020, our cash equivalents consisted of interest-bearing checking accounts and money market funds. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term nature and the low risk profile of our interest-bearing accounts, an immediate 10% change in interest rates would not have a material effect on the fair market value of our cash and cash equivalents or on our financial position or results of operations.

Inflation generally affects us by increasing our costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2019 and 2020.

Emerging Growth Company and Smaller Reporting Company Status

We are an emerging growth company, as defined in the JOBS Act, and we may remain an emerging growth company for up to five years following the completion of this offering. For so long as we remain an emerging growth company, we are permitted and intend to rely on certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments not previously approved and an exemption from compliance with the requirements regarding the communication of critical audit matters in the auditor’s report on financial statements. In particular, in this prospectus, we have provided only two years of audited financial statements and have not included all of the executive compensation-related information that would be required if we were not an emerging growth company. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as public companies that are not emerging growth companies. As a result of this election, our financial statements may not be comparable to those of companies that are not emerging growth companies.

We will remain an emerging growth company until the earliest to occur of: (i) the last day of the fiscal year in which we have at least $1.07 billion in annual revenue; (ii) the last day of the fiscal year in which we are deemed to be a "large accelerated filer," as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year; (iii) the date on which we have issued more than $1.0 billion in nonconvertible debt securities during the prior three-year period; and (iv) the last day of the fiscal year ending after the fifth anniversary of this offering.

We are also a "smaller reporting company," meaning that the market value of our shares held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700.0 million and our annual revenue was less than $100.0 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our shares held by non-affiliates is less than $250.0 million; or (ii) our annual revenue was less than $100.0 million during the most recently completed fiscal year and the market value of our shares held by non-affiliates is less than $700.0 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

BUSINESS

Overview

We are a clinical-stage biopharmaceutical company developing a novel disease-modifying approach to target what we believe to be a key underlying cause of Alzheimer's disease, or AD. Alzheimer's disease is a progressive neurodegenerative disease of the brain that leads to loss of memory and cognitive functions and ultimately results in death. Our scientific founders pioneered research on soluble amyloid-beta oligomers, or AbOs, which are globular assemblies of the amyloid-beta, or Ab, peptide that are distinct from Ab monomers and amyloid plaques. Based on decades of research and supporting evidence, AbOs have gained increasing scientific acceptance as a primary toxin involved in the initiation and propagation of AD pathology. We are currently focused on advancing a targeted immunotherapy drug candidate, ACU193, through clinical proof of mechanism trials in early AD patients. ACU193 is a humanized monoclonal antibody, or mAb, that selectively targets AbOs, has demonstrated functional and protective effects in in vitro assays, and has demonstrated in vivo safety and pharmacologic activity in multiple animal species, including transgenic models for AD. We initiated our Phase 1 clinical trial of ACU193 in the second quarter of 2021 with the objective to evaluate its safety and tolerability and explore its pharmacokinetics and target engagement. This trial is enrolling patients with mild dementia or mild cognitive impairment, or MCI, due to AD, conditions referred to as "early AD." Data from this trial are expected by the fourth quarter of 2022.

ACU193 is the result of over a decade of research and development undertaken by the company, which included a drug discovery partnership with Merck & Co., Inc., or Merck, from 2003 to 2011. ACU193's mechanism of action is intended to slow disease progression and potentially preserve or improve memory function in early AD patients by binding to AbOs. AbOs are known to bind to neurons, leading to synaptic malfunction, memory deficits, cognitive impairment and, ultimately, neurodegeneration and cell death. As such, we believe AbOs are the most toxic and pathogenic form of Ab in the brains of AD patients relative to other forms of amyloid, including Ab monomers and amyloid plaques. We believe the development and commercialization of a drug that reduces toxicity of AbOs is one of the most promising approaches for the potential treatment and prevention of the progression of AD.

In our nonclinical studies, we observed that ACU193 has over 500-fold greater selectivity for AbOs over Ab monomers and has limited or no binding to amyloid plaques. Also, ACU193 potently prevents binding of AbOs to hippocampal neurons. Recent laboratory studies conducted by us and others suggest that inhibiting AbOs may enable damaged brain circuits to regain some function and prevent further degeneration from occurring. ACU193 has demonstrated in vivo biochemical and behavioral activity in several AD mouse models, including crossing the blood-brain barrier and forming complexes with AbOs in a dose-dependent manner. ACU193 has shown consistent pharmacokinetics and brain penetration properties in four animal species. Safety toxicology studies in rats and monkeys provide acceptable margins for dosing in the clinic. Additionally, studies in transgenic mice indicate low potential for microhemorrhage. Based in part on its binding affinity for AbOs rather than amyloid plaques, ACU193 has the potential to have a lower rate of amyloid-related imaging abnormalities, or ARIA, than the plaque-clearing anti-amyloid antibody therapies currently in development. ARIA is a common adverse event for antibodies targeting amyloid plaque and can be a dose-limiting safety liability for those antibodies.

Our Phase 1 trial is a U.S.-based, multi-center, randomized, double-blind, placebo-controlled clinical trial with overlapping single ascending dose, or SAD, and multiple ascending dose, or MAD, cohorts involving 62 patients with early AD. The overall objective of the trial is to evaluate the safety and tolerability, and establish clinical proof of mechanism of ACU193 administered intravenously in single and multiple escalating doses. The primary trial endpoints are focused on safety and immunogenicity. An important safety measure will be the use of magnetic resonance imaging, or MRI, to assess the presence or absence of ARIA. Secondary endpoints include pharmacokinetics in plasma and cerebrospinal fluid, or CSF, and target engagement as evidenced by detection of ACU193 bound to AbOs in CSF. Clinical scales typically used in AD trials as well as computerized cognitive testing are included as exploratory measures. We expect to report proof of mechanism results by the fourth quarter of 2022, with periodic updates including trial progress and cohort advancement.

Alzheimer's disease currently affects over 6 million people in the United States and approximately 32 million people worldwide and is the sixth-leading cause of death in the United States. However, due to the aging population, patient populations in the United States impacted by AD are expected to triple by 2050 without effective preventative measures or disease-modifying treatments. By 2050, healthcare costs for AD in the United States alone are estimated to exceed $1 trillion. While medications that provide a modest improvement in AD symptoms are available, no therapies are currently approved to address the underlying cause of and slow the inexorable progression of the disease. The need for a medical breakthrough in AD treatment and prevention becomes more urgent with each passing year, and we believe that our novel approach can potentially help address this pressing need.

Understanding the Foundation of Our Therapeutic Approach

While the pathology of AD was first described by Dr. Alois Alzheimer in 1906, the amyloid hypothesis was not developed until the Ab peptide was first identified as a major constituent of amyloid plaques in the 1980s. Historically, the primary hypothesis of decades of AD research, known as the amyloid hypothesis, held that AD dementia is the clinical consequence of Ab peptide monomers accumulating into extracellular amyloid plaques, or amyloid plaques, which in turn contribute to the formation of intracellular neurofibrillary tangles composed of the tau protein and cause inflammation, ultimately leading to neuronal cell loss and progressive dementia. The primary constituent of amyloid plaques is the Ab peptide, although other proteins are present to lesser degrees.

The amyloid hypothesis was more firmly established when a series of genetic mutations causing AD were discovered in the early to mid-1990s. These mutations were found in genes coding for the Amyloid Precursor Protein, or APP, and the genes coding for one of the enzymes which cleaves APP, creating the Ab peptide. Based on this hypothesis, a number of monoclonal antibodies currently or previously in clinical development for AD have primarily targeted either Ab monomers or amyloid plaques; for our purposes, this broadly defined class is referred to as anti-Ab/plaque antibodies. Several of these antibodies are currently in late-stage development or are awaiting regulatory approval, and collectively they have provided a biological foothold for treating AD. However, the clinical data available to date indicate some of the potential limitations of these approaches with respect to clinically meaningful patient benefit and safety.

Though alternative hypotheses to the amyloid hypothesis propose that amyloid accumulation is a consequence of another process such as infection, the field has now developed an understanding that the three predominant pools of Ab species exist in vivo: Ab monomers (single Ab peptide), amyloid plaques (insoluble fibrillar Ab), and soluble AbOs (dimers and up to 200-mers). The more recent appreciation of the crucial role of AbOs in the pathologic process is the central tenet of our therapeutic approach.

Our therapeutic approach focuses on targeting AbOs, which we believe are the most toxic and pathogenic form of Ab relative to Ab monomers and amyloid plaques. Growing evidence, spurred by advances in AD research and analytic techniques, supports our view that AbOs are the main instigators of AD neurodegeneration. AbOs have been observed to be potent neurotoxins that cause both acute synaptic toxicity and induce neurodegeneration. Experimentally in animal models, the accumulation of AbOs is associated with core AD neuropathologies, including synapse deterioration and loss, tau phosphorylation, and inflammation. Research has also shown that the accumulation of AbOs is associated with AD-related behavioral deficits, such as learning and memory impairment. In light of this evidence, we believe that blocking the toxicity of AbOs is the most promising approach for the treatment of AD, which led us to discover and develop ACU193.

Our Product Candidate

Our product candidate, ACU193, is a humanized monoclonal antibody that targets soluble AbOs. We are developing ACU193 for intravenous, or IV, administration every four weeks for the treatment of early AD. We believe that ACU193 represents a differentiated approach from current and prior anti-Ab/plaque immunotherapies

because it is highly selective for soluble AbOs. ACU193 has a nanomolar affinity for AbOs, over 500-fold greater selectivity for AbOs over Ab monomers, and limited or no binding to dense core amyloid plaques. We believe ACU193 is the most advanced immunotherapy candidate in development that selectively targets AbOs.

We believe ACU193 has characteristics that make it a promising potential treatment for AD relative to other antibodies that do not selectively target oligomers. ACU193 is engineered to reduce immune effector function signaling and to avoid binding to vascular amyloid, which we expect will reduce the incidence of ARIA observed with amyloid plaque-targeting immunotherapies currently in development for AD. We are currently assessing ACU193 in a proof of mechanism Phase 1 clinical trial involving early AD patients, which we expect to follow with an adaptive Phase 2/3 clinical trial in 2023.

Summary of Clinical Development Plan

In the second quarter of 2021, we initiated a U.S.-based, multi-center, randomized, placebo-controlled, single and multiple ascending dose Phase 1 clinical trial of ACU193 in patients with early AD. The early AD patient group is comprised of individuals who have mild dementia or MCI due to AD, and our trial excludes patients with moderate to severe AD dementia. We plan to enroll 62 patients across seven cohorts, consisting of a single ascending dose Part A (32 participants) and an overlapping multiple ascending dose Part B (30 participants). Part A will contain Cohorts 1 through 4; each cohort will receive a single IV dose between 2mg/kg and 60 mg/kg, or placebo. Part B will contain Cohorts 5 through 7; each cohort will receive a total of three doses of ACU193 or placebo as follows: 10 mg/kg every four weeks (Q4W), 60 mg/kg Q4W, or 60 mg/kg every two weeks (Q2W).

The main objectives of the trial are to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics, and target engagement of single and multiple ascending doses of ACU193 administered by intravenous infusion. Exploratory outcomes will include cognitive scales and computerized cognitive testing. Our goal is to establish proof of mechanism of ACU193 in early AD patients in order to enable rapid progression into an adaptive Phase 2/3 clinical trial. We intend to provide periodic updates of the status of the Phase 1 trial and anticipate reporting proof of mechanism results in the fourth quarter of 2022.

Summary of Our Nonclinical Data

In nonclinical studies, ACU193 has demonstrated promising characteristics that indicate its potential to inhibit AbOs as a possible therapeutic treatment of AD. ACU193 has high selectivity, with over 500-fold binding selectivity for AbOs compared to Ab monomers and has limited or no binding to amyloid plaques. ACU193 binds to a broad spectrum of small to large soluble AbOs. Additionally, ACU193 has been shown to offer protection from synaptic toxicity by inhibiting binding of AbOs to primary hippocampal neurons. ACU193 has also demonstrated suitable in vivo pharmacology, target engagement, blood-brain barrier penetration and reduction of behavioral deficits. Based on nonclinical studies, AbO target engagement has the potential to be achieved at doses of ACU193 that will be tested in our Phase 1 clinical trial. Lastly, ACU193 has been shown to have an adequate safety margin in Good Laboratory Practice, or GLP, toxicity studies conducted in two animal species. These data indicate that ACU193 has the potential to offer patients a reduction in cognitive decline.

Our Strategy

Our objective is to transform the treatment of AD, and potentially other diseases, by developing innovative therapeutics that target primary drivers of disease pathology. Our initial therapeutic approach is focused on inhibiting and reducing the toxic activity of AbOs, which may allow for synaptic protection and

decreased neurodegeneration, leading to more effective treatment for patients with early AD. To achieve this objective, we are pursuing the following strategies:

- **Rapidly advance ACU193 through clinical development in patients with early AD.** Based on the strength of the data we observed in our nonclinical studies, we initiated a Phase 1 clinical trial in the second quarter of 2021 designed to evaluate safety and tolerability and establish proof of mechanism of ACU193 in early AD patients, which we expect to follow with an adaptive Phase 2/3 clinical trial.

- **Evaluate combination approaches to complement our core ACU193 monotherapy strategy.** Using ACU193 as the foundation of our AD therapy, we will evaluate its potential to be used in combination with drugs currently in development that have complementary mechanisms, which, if successful, could provide additive or even synergistic effects when used with ACU193. These other drugs include various antibodies and small molecules targeting tau, investigational drugs targeting inflammation (TREM2), regenerative drugs (hepatocyte growth factor/MET receptor stimulator) and drugs which putatively improve astrocyte function.

- **Selectively explore potential of ACU193 for other diseases.** Toxic AbOs have been implicated in several disease pathologies in nonclinical and epidemiological studies (e.g., dementia associated with Down Syndrome, glaucoma and retinopathies associated with age-related macular degeneration). Where both human observational data and nonclinical experiments support its therapeutic potential, we may conduct clinical trials of ACU193 in other indications.

- **Expand our portfolio by developing additional molecules.** In the long term, a key element of our portfolio strategy is to advance additional molecule development through in-licensing or development of alternative formulations for or derivatives of ACU193. Additional molecules may utilize complementary mechanisms to ACU193, making them candidates for combination therapies or as next-generation products.

- **Optimize value of ACU193 and future drug candidates in major markets.** We have an exclusive license from Merck to patents claiming the composition and method of use of ACU193. We plan to develop and pursue approval of ACU193 and other future drug candidates in major markets. We anticipate entering into strategic collaborations and partnerships to maximize the commercial potential of ACU193 and any future programs.

Our Team

We are led by an experienced management team with deep scientific and drug development knowledge and a strong commitment to developing safe and effective therapies for patients. Collectively, our management team has a rich set of experiences in industry as well as in academia, and has led clinical development programs at both public and venture-backed clinical-stage companies, as well as with large biopharmaceutical companies such as Eli Lilly & Co., or Eli Lilly. We are led by our President and Chief Executive Officer, Daniel O’Connell, our Chief Medical Officer, Eric Siemers, M.D. and our Chief Operating Officer, Russell Barton. Our executive team is complemented our drug development experts, approximately half of whom hold Ph.D. or M.D. degrees and are former members of Eli Lilly’s global AD clinical development organization. These team members, including Dr. Siemers and Mr. Barton, have worked for over a decade on early- through late-phase AD drug development, including numerous early-phase AD trials and five large multi-national Phase 3 studies in AD. Together, our management team brings expertise across relevant disciplines, including neuroscience, neurology, translational science, protein manufacturing, biomarker development and quality and regulatory affairs. We believe our team’s experience and longstanding working relationships position us to take ACU193 through late-stage clinical development and potentially regulatory approval.

Our board of directors is comprised of our CEO and industry leaders that bring relevant biopharma and finance experience, including Jeffrey Ives, Ph.D., Venture Partner at New Leaf Venture Partners; Jeffrey Sevigny, M.D., Chief Medical Officer at Prevail Therapeutics; Sean Stalfort, President at PBM Capital; Laura Stoppel, Ph.D., Principal at RA Capital Management; and Stephen Zachary, Ph.D., Partner at Sands Capital.

We were founded by Caleb Finch, Ph.D., Grant Krafft, Ph.D. and William Klein, Ph.D., and Drs. Krafft and Klein currently serve as Scientific Advisors. Our clinical and scientific advisory board is comprised of leading researchers in the fields of AD, neurodegeneration and medicine, including Jeffrey Cummings, M.D., Sc.D., director for Transformative Neuroscience at the University of Nevada, Las Vegas; Steven DeKosky, M.D., deputy director at McKnight Brain Institute at the University of Florida; Cynthia Lemere, Ph.D., associate professor of neurology in the Ann Romney Center for Neurologic Diseases at Brigham and Women's Hospital and Harvard Medical School; Colin Masters, M.D., professor and laboratory head of neuropathology and neurodegeneration at The Florey Institute; Stephen Salloway, M.D., M.S., director of neurology at Butler Hospital and professor at Brown University; Jeffrey Sevigny, M.D., who also sits on the Company's board of directors; Reisa Sperling, M.D., professor of neurology at Harvard Medical School; and Michael Weiner, M.D., professor in residence in radiology and biomedical imaging, medicine, psychiatry, and neurology at the University of California, San Francisco.

Our company is supported by a group of institutional investors, and we have raised approximately $67.5 million in funding as of December 31, 2020. Our key investors include BlackRock, PBM Capital, RA Capital Management, Rock Springs Capital, Sands Capital and several other private investors.

Impact of AD

Alzheimer's disease represents a significant unmet medical need and there are no marketed treatments that address the underlying cause of the disease. Alzheimer's disease is a progressive neurodegenerative disease that destroys memory and other important cognitive functions and ultimately leads to patient death. Alzheimer's disease is the sixth-leading cause of death in the United States. The disease afflicts more than 6 million people in the United States and more than 32 million people worldwide, and the patient population in the United States is expected to grow to approximately 13 million people in the United States by 2050. Alzheimer's disease can have a significant burden on family and caretakers. In 2020, these caregivers provided an estimated 15.3 billion hours of care valued at nearly $257 billion. The direct costs of caring for individuals with AD and other dementias in the United States were estimated to total $355 billion in 2021, and are projected to increase to $1.1 trillion by 2050, according to the Alzheimer's Association.

Therapeutic Approaches to AD

The development of effective therapeutics addressing the underlying cause of AD is one of the greatest medical challenges facing society. Existing treatments for AD consist of drugs that provide modest improvements in symptoms but have no impact on the underlying disease and are unable to halt or slow disease progression. While the pathology of AD was first described by Dr. Alois Alzheimer in 1906, the amyloid hypothesis was not developed until the Ab peptide was first identified as a major constituent of amyloid plaques in the 1980s. The hypothesis was more firmly established when a series of genetic mutations causing the disease were discovered in the early to mid-1990s. These mutations were found in genes coding for APP or in genes coding for one of the enzymes which cleaves APP, creating the Ab peptide.

Available Treatments: Symptomatic Treatments

Currently available symptomatic treatments include memantine, an N-methyl-D-aspartate receptor antagonist, and cholinesterase inhibitors, a class of drugs that block the normal breakdown of acetylcholine. The first approved cholinesterase inhibitor, tacrine, was approved in 1993, but was later withdrawn from the market due to liver toxicity. Three other cholinesterase inhibitors were subsequently approved and continue to be used

clinically. Memantine is the most recently approved drug for AD in 2003 and is indicated for use in moderate to severe AD patients.

*Potential Disease-Modifying Approaches focusing on A*b

Because of the lack of significant improvement provided by these symptomatic drugs, there remains a significant need for therapies that target underlying disease pathology and potentially slow or halt disease progression. Based on the strong linkage between Ab and AD pathology established by decades of research, a range of treatment modalities focusing on Ab have been explored as potential disease-modifying treatments, including g-secretase inhibitors, b-site APP-cleaving enzyme, or BACE, inhibitors and monoclonal antibodies.

Initial attempts at disease modification were made using g-secretase inhibitors and BACE inhibitors, each of which inhibited a different enzyme necessary to produce the Ab peptide. The first Phase 3 clinical trial results from a g-secretase inhibitor, semagacestat, were reported in 2010 and unexpectedly showed modest cognitive worsening. Development of the other g-secretase inhibitor, avagacestat, was also stopped due to cognitive worsening observed in the clinic. At least four BACE inhibitors have reached clinical trials; however, during 2018 and 2019, Phase 3 clinical trial results for many BACE inhibitors, including verubecestat and elenbecestat, also unexpectedly showed modest clinical worsening.

A third class of potential disease-modifying agents, monoclonal antibodies, or mAbs, have targeted Ab monomers or amyloid plaques directly. Some of these monoclonal antibodies, such as solanezumab (an Eli Lilly product), target Ab monomers, while others, such as aducanumab (a Biogen product), target deposited amyloid plaque, and these monoclonal antibodies have been evaluated in Phase 2 and Phase 3 trials over the period from 2012 to 2021. The most clinically advanced monoclonal antibody for the treatment of AD is aducanumab, for which Biogen has applied for regulatory approval from the Food and Drug Administration, or FDA, European Medicines Agency, or EMA, and Pharmaceuticals and Medical Devises Agency, or PMDA, in the United States, Europe, and Japan, respectively. As shown in Table 1 below, several of these antibodies have demonstrated some degree of slowing of disease progression in clinical trials, as measured by customary assessments of cognition and function.

Table 1: Percent Slowing of Cognitive/Functional Decline*

Measured Outcome**	solanezumab EXPEDITION 3 (Phase 3)	aducanumab EMERGE (Phase 3)	aducanumab ENGAGE† (Phase 3)	BAN2401 (Phase 2)	donanemab (Phase 2)
ADAS-cog	-11%	-27%	-12%	-47%	-39%
ADCS-ADL	-15%	-40%	-18%	N.A.	-23%
CDR-SB	-15%	-23%	2%	-26%	-23%
MMSE	-13%	-15%	3%	N.A.	-21%
iADRS	-11%	N.A.	N.A.	N.A.	-32%

* Percent Slowing= [1- [(endpoint score-baseline score)active/(endpoint score-baseline score)placebo]]*100%*(-1)

** ADAS-cog: Alzheimer's Disease Assessment Scale – Cognitive Subscale
ADCS-ADL: Alzheimer's Disease Cooperative Study – Activities of Daily Living
CDR-SB: Clinical Dementia Rating – Sum of Boxes
MMSE: Mini-Mental State Examination
iADRS: Integrated Alzheimer's Disease Rating Scale

†: ENGAGE Post-Protocol Version 4 – patients who received at least 14 doses of 10 mg/kg, High Dose cohort achieved 27% improvement on CDR-SB compared to placebo.

A potential limitation of the amyloid plaque-targeting antibodies under development is an adverse effect known as ARIA. ARIA has two different forms, ARIA-E, or cerebral edema, formerly called vasogenic edema, and ARIA-H, or cerebral microhemorrhages. While the mechanism of ARIA is not known with certainty, the prevailing theory is that ARIAs are related to the presence of amyloid plaques around blood vessels in the vast majority of people with AD, a condition known as cerebral amyloid angiopathy. It is generally believed that the

removal of these amyloid plaques by the antibody can result in small hemorrhages, or ARIA-H. ARIA-H occurs in untreated individuals with AD and is increased in individuals treated with antibodies that target amyloid plaques. Increased ARIA-H is correlated with worsening cognition. In contrast to ARIA-H, ARIA-E is hypothesized to result from the leakage of fluid from the blood vessels into the interstitial spaces in the brain, causing edema, or ARIA-E. ARIA-E, in particular, is sometimes associated with symptoms that include worsening of cognition, headache, and gait disturbance, which can be severe enough to lead to hospitalization. ARIA-E usually resolves weeks to months following the cessation of treatment. In clinical trials for anti-Ab/plaque mAbs, surveillance MRI scans are required to detect asymptomatic ARIA. Table 2 below illustrates the rates of ARIA observed in Phase 2 or 3 studies for the most advanced mAbs. Given observed rates of ARIA, from approximately 10% to over 40%, we believe that MRI scans to assess for ARIA are likely to be required in clinical practice for any amyloid plaque-targeting monoclonal antibody that receives regulatory approval.

Table 2: Percent of ARIA Events for Anti-Ab/plaque mAbs*

	Targeting Ab Monomers		Targeting Amyloid Plaques									
	solanezumab EXPEDITION 3 (Phase 3)		aducanumab EMERGE (Phase 3)			aducanumab ENGAGE (Phase 3)			BAN2401 (Phase2)		donanemab (Phase 2)	
	PC	Treated	PC	Low	High	PC	Low	High	PC	High	PC	Treated
ARIA-E	0.2%	0.1%	2.2%	26.1%	34.4%	3.0%	25.6%	35.7%	0.8%	9.9%	0.8%	27.5%
ApoE e4 carriers			1.9%	29.8%	42.5%	2.4%	28.7%	41.8%	1.2%	14.6%	3.6%	44.0%
ApoE e4 non-carriers			2.9%	18.1%	17.9%	4.3%	17.5%	27.7%	0.0%	8.0%		
Any ARIA E or H			10.3%	32.8%	41.2%	9.8%	30.7%	40.3%	N.A.		8.0%	38.9%

PC = Placebo, Low = Low Dose; High = High Dose
*Shows the absence of ARIA after treatment with antibodies targeting Ab monomers (solanezumab) in comparison to the increasing presence of ARIA after treatment at increasing dose levels with antibodies targeting amyloid plaques (aducanumab, BAN2401, and donanemab), indicate that ARIA results from the removal of amyloid plaques around blood vessels and likely does not result, from treatment with antibodies that target other species of Ab, i.e. Ab monomers and AbOs.

Table 3: AD Product Candidates and Target Selectivity and ARIA Profile

	Target Selectivity+				ARIA Profile
Product Candidate	Amyloid plaque	Ab fibrils	Ab monomers	Ab oligomers	Lack of ARIA
ACU193	x	untested	x	✓	✓
aducanumab	✓	✓	x	✓	x
lecanemab BAN2401	✓	✓	x	✓	x
gantenerumab	✓	✓	x	✓	x
donanemab	✓	untested	x	x	x
solanezumab*	x	x	✓	x	✓
crenezumab*	✓	✓	✓	✓	✓
bapineuzumab*	✓	✓	✓	✓	x

*Phase 3 discontinued for primary AD indication
+ There have been no head-to-head clinical trials between any of the product candidates listed above. Study designs and protocols for each product candidate were different, and results may not be comparable between product candidates.

Additional Treatment Modalities

While Ab and amyloid are generally considered to be the proximal cause of AD pathology, and alternative hypotheses to the amyloid hypothesis propose that amyloid accumulation is a consequence of other processes such as infection and that other pathogens lead to amyloid accumulation, downstream targets such as tau, inflammation-related targets, and growth factors may eventually be useful approaches in the treatment of AD and are being explored. Some of these treatment modalities have made nonclinical and early stage clinical progress, although these efforts are still significantly less advanced than those approaches targeting Ab or amyloid plaques.

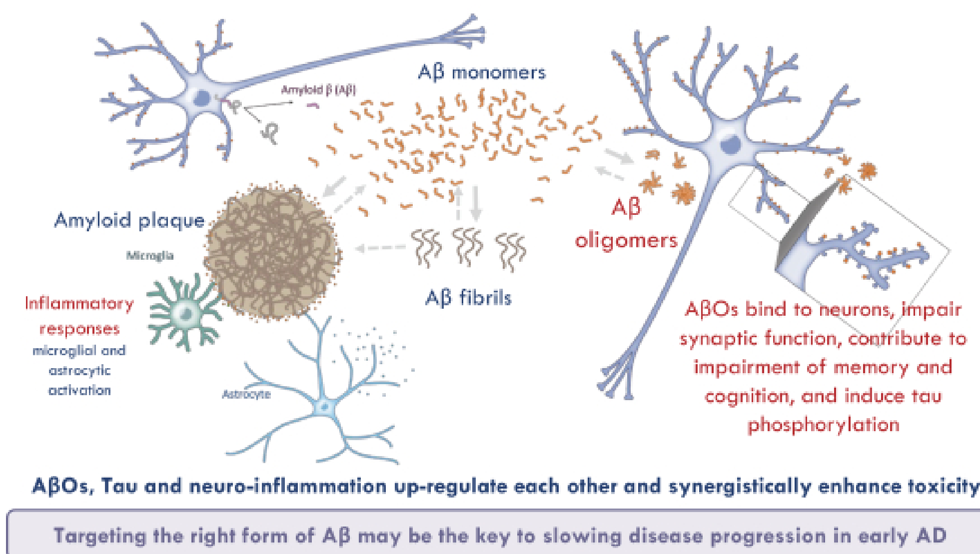
Potential Combination Approaches

The pathology of AD is complex, and many experts in the field expect that combination therapy using drugs with different mechanisms of action, such as tau-based therapies and immune inflammatory modulation, will ultimately prove most successful, similar to cutting edge approaches used in oncology. We believe that a drug targeting AbOs will likely be an important component of a combination treatment. In addition, because symptomatic treatments, such as memantine and cholinesterase inhibitors, affect neurotransmitter systems rather than the underlying AD pathology, we believe that it is likely that they will be used together with disease-modifying treatments.

Growing Interest in the Anti-AbO Hypothesis and AbOs as a Drug Target for AD

An important refinement of the amyloid hypothesis is the recognition that at least three pools of Ab species exist in vivo—Ab monomers, AbOs, and amyloid plaques. Because these pools exist in equilibria, manipulation of one pool may have indirect effects on other pools. For example, reduction of Ab monomers may reduce AbOs to some degree. Limited successes in the clinic have been demonstrated with antibodies targeting Ab monomers, even though Ab monomers themselves are not widely accepted to have toxic properties. Similarly, limited successes in the clinic have been demonstrated using antibodies that target amyloid plaques, although insoluble fibrillar Ab and b-amyloid plaques exhibit relatively low in vitro toxicity and may even serve as an in vivo mechanism for removal of the more toxic soluble Ab species. Both Ab monomers and amyloid plaques can act as sources of AbOs. The positive results of monoclonal antibodies targeting Ab monomers and amyloid plaques, even in the absence of targeting AbOs directly, support the significance of Ab and amyloid in AD and have led to a growing confidence in the field in the amyloid hypothesis broadly. In contrast to the non-toxic Ab monomers and relatively non-toxic amyloid plaques, AbOs are known to bind to neurons, causing synaptic dysfunction and possibly contributing to cognitive impairment, neurodegeneration and cell death. As a result, AbOs are now generally believed to be the most toxic form of Ab. The acute synaptic and chronic neurodegenerative toxicity of AbOs, coupled with their very low in vivo levels, suggests that they may be an optimal therapeutic target compared to Ab monomers and fibrillar Ab species. Therefore, we believe that drugs that directly target AbOs could represent a promising new approach to the potential treatment of AD.

Figure 1: Ab related species and pathophysiology of AD



The precise mechanism of toxicity of AbOs is not fully understood, however numerous studies suggest a mechanism that may include initial reversible memory loss caused by acute AbO-induced disruptions of synaptic plasticity, with progressive dementia attributable, at least in part, to neuronal degeneration induced by chronic exposure to AbOs. AbOs bind to synapses on hippocampal and cortical neurons. In rodent hippocampal slice preparations, AbOs cause rapid inhibition of long-term potentiation, or LTP, and direct injection of AbO solutions into rodent brains leads to reversible impairment of cognitive function. These findings support the view that AbOs may interfere acutely with normal synaptic functions and contribute significantly to the memory loss and cognitive dysfunction characteristic of AD. With regard to neurodegeneration, binding of AbOs to neurons also causes damage within neurons, such as calcium influx and the hyperphosphorylation of tau, which leads to neurofibrillary tangles, another downstream hallmark of AD pathology.

Our Differentiated Approach to the Treatment of AD

We believe that, based on its differentiated mechanism of action, potential for symptomatic improvement and disease modification, and potential for higher dosing, ACU193 has several potential advantages in comparison to other AD drugs that are currently approved or in development:

Differentiated mechanism of action:

- **Potentially addresses an underlying cause of AD**. A growing body of evidence indicates that AbOs, rather than Ab monomers or amyloid plaques, are the primary toxic species that impair neuronal synaptic function and contribute to impairment in memory and cognition and neurodegeneration. We believe that AbOs are an optimal therapeutic target relative to other Ab species and that ACU193 has the potential to be the first anti-AbO directed treatment to prevent or slow the progression of AD.

- **Selectively binds to AbO.** ACU193 is the first monoclonal antibody discovered and designed to selectively target AbOs. In our nonclinical studies, ACU193 demonstrated a greater than 500-fold affinity to bind to AbOs over monomers and did not bind vascular amyloid or dense core amyloid plaques. In comparison, other non-selective anti-Ab/amyloid antibodies in development bind primarily to Ab monomers or amyloid plaques.

- **Binds to a broad spectrum of toxic AbOs.** AbOs are present in the brain in a wide range of sizes. ACU193 has the ability to bind to a broad spectrum of toxic AbOs across various molecular weights. Nonclinical data shows that ACU193 binds to low- to mid-sized molecular weight oligomeric species.

Potential for symptomatic improvement and disease modification:

- **May provide symptomatic improvement in addition to disease modification.** While recent anti-Ab monoclonal antibody results have established a biological foothold for disease-modifying treatments for AD, they fail to demonstrate clinically meaningful symptomatic improvement as measured by AD clinical assessments. Recent nonclinical studies show that AbOs are acutely toxic to neuronal function. By selectively targeting and neutralizing AbO toxicity, we believe that ACU193 has the potential to build upon this biological foothold and provide improvements in cognitive function in addition to disease-modifying effects.

Potential for higher dosing:

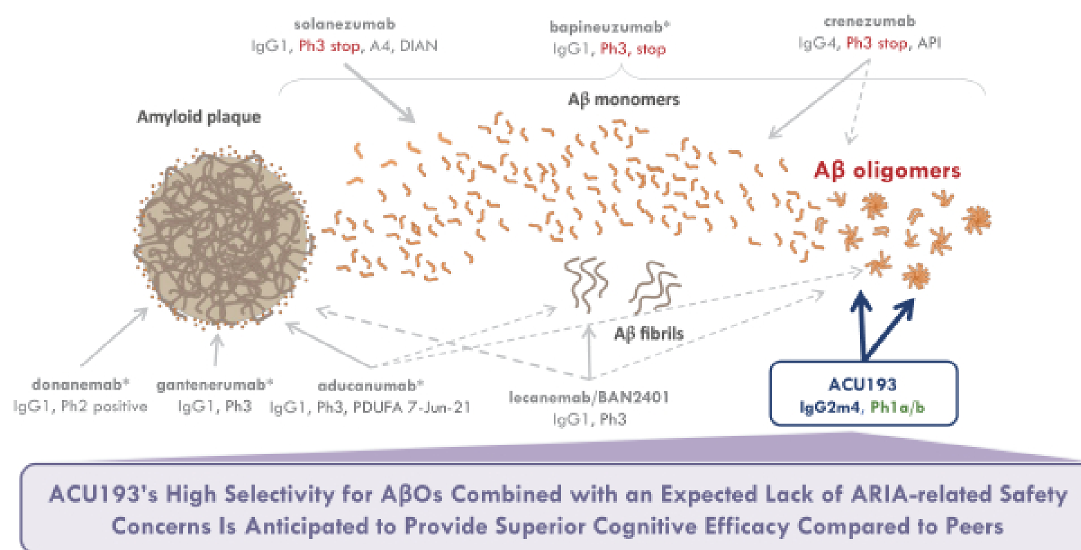
- **Selectivity for AbOs is likely to result in greatly reduced rates of ARIA, allowing a broad therapeutic window.** Amyloid plaque binding antibodies have been associated with ARIA, with IgG1 monoclonal antibodies in particular showing elevated rates of ARIA, which presents a safety concern. In contrast, ACU193 was engineered as an IgG2m4 subclass monoclonal antibody, which lacks the inflammatory effector functions of other IgG subclasses. Because ACU193 exhibits

limited or no binding to amyloid plaques and lacks inflammatory effector functions, we believe that treatment with ACU193 is likely to result in greatly reduced rates of ARIA adverse events relative to IgG1 monoclonal antibodies that bind to plaque. ACU193 has demonstrated a favorable pharmacokinetic profile in nonclinical studies. Based on the results of GLP safety studies in rats and monkeys, we believe that ACU193 has the potential to be clinically well-tolerated at doses up to 60 mg/kg. While certain anti-Ab/plaque antibodies have dose limitations due to ARIA, we believe that ACU193 may be well-tolerated at higher doses.

ACU193: First AD Immunotherapy Candidate to Selectively Target AbOs

Our product candidate, ACU193, is a humanized, affinity-matured, immunoglobulin G2m4, or IgG2m4, subclass monoclonal antibody, derived from the murine immunoglobulin G1, or IgG1, parent, ACU3B3. ACU193 lacks the inflammatory effector functions of other IgG subclasses. ACU193 binds with high selectivity to soluble AbOs (over 500-fold versus Ab monomer in a competitive assay), differentiating ACU193 from other therapeutic monoclonal antibodies, which primarily bind Ab monomers or fibrillar forms of Ab. Binding of ACU193 to AbOs may improve synaptic function and decrease neurodegeneration.

Figure 2: Summary comparison of ACU193 to anti-Ab/plaque antibodies in clinical development



* All IgG1 monoclonal antibodies that bind amyloid plaque have shown high rates of ARIA-E.

Despite recognition that AbOs are key structures contributing to AD memory dysfunction, cognitive deficits, and neurodegeneration, drug discovery efforts targeting these species have been hampered by technical difficulties of generating physiologically relevant preparations of synthetic AbOs, or syn-AbOs. Our founders and early-stage researchers were instrumental in the development of well-characterized preparations of syn-AbOs, initially termed Ab Derived Diffusible Ligands, or ADDLs. ADDL preparations were used as the immunogen to generate and discover ACU3B3, the murine IgG1 parent of ACU193.

In December 2003, we entered into an exclusive license and research and development collaboration agreement with Merck for the research, discovery, development, and commercialization of immunotherapies for AD. From 2003 to 2011, Merck carried out extensive research leading to the humanization of ACU3B3 and creation of ACU193. ACU193 emerged as the lead product candidate based on its preferential AbO binding,

favorable immunogenicity profile, and an absence of off-target binding. In 2011, Merck chose to terminate the program largely based on internal strategic priorities. Consequently, we regained an exclusive, perpetual, irrevocable, royalty-free, worldwide license for the research, development, manufacturing or commercialization of ADDL antibodies, ADDL antigens, or products, including ACU193.

Product Profile

We are developing ACU193, a humanized monoclonal antibody targeting soluble AbOs, as an IV administered treatment for early AD patients. The early AD population is defined as individuals with clinical symptoms consistent with MCI, or consistent with mild dementia who have demonstrated amyloid pathology as assessed with either a positron emission tomography, or PET, or cerebrospinal fluid analysis. A blood test to determine amyloid status may become available in the future. We believe ACU193 has the potential to reduce the rate of cognitive decline by at least 35%, which would be broadly considered as clinically meaningful.

ACU193 is a humanized, affinity-matured, mAb with high selectivity for toxic AbOs versus Ab monomers (greater than 500-fold) and amyloid plaques. With its selective targeting of AbOs, we believe that ACU193 could demonstrate a number of potential valuable clinical outcomes, including the slowing of disease progression and downstream changes in tau and neurofibrillary tangles. Additionally, given the acute toxicity of AbOs in laboratory studies, we believe that some patients could experience an improvement in cognitive function. ACU193's epitope is composed of a configuration of the N-terminal regions of Ab monomers within AbOs. AbOs form when Ab monomers associate co-linearly along the central alpha helical domains through C-terminal regions via stacking phenylalanine polar bonding associations. This presents an advantage for ACU193 binding because the co-linear association sterically restricts spatial configuration of the N-terminal regions presented by AbOs. The N-termini within AbOs are anionic and repel one another, resulting in presentation of N-terminal amino acids, which lead to high affinity for ACU193 binding.

In its current formulation, ACU193 deamidates at physiological pH and body temperature. The rate of deamidation is specific to the matrix and temperature, and results in reduced target binding. To prevent deamidation prior to administration of ACU193 in the clinic, the current drug product is stored frozen at -20°C.

ACU193 is an IgG2m4 subclass mAb which lacks the inflammatory effector function signaling stimulated by other IgG subclasses. The product is expected to be given as an IV infusion once every four weeks. Given the indication, ACU193 treatment would be initiated for patients diagnosed with mild dementia or MCI and would likely be continued for several years. Based on the target and lack of inflammatory effector function, we believe the rate of ARIA may be reduced compared to approaches targeting amyloid plaques. Finally, ACU193 could be used in combination with other therapies that might become available for AD, especially those targeting the tau protein or modulating the immune system.

Nonclinical Data Package

Summary of Nonclinical Studies

In our nonclinical studies, ACU193 has demonstrated: (i) preferential selectivity for binding to AbOs versus other forms of Ab monomers and amyloid plaques in in vitro assays, human AD tissue samples and in vivo transgenic mouse models; (ii) consistent data in support of ACU193 protective effects against AbO synaptic toxicity in in vitro and ex vivo assays; (iii) in vivo pharmacology in multiple species confirming blood-brain barrier penetration, target engagement, and behavioral effects; and (iv) safety data in multiple species including GLP toxicology studies in Sprague-Dawley rats and cynomolgus monkeys confirming an adequate safety margin for the first in human clinical trial. Based on the strength of the data we observed in our nonclinical studies, we initiated a Phase 1 clinical trial in the second quarter of 2021.

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Key Characteristics and Data

Selectivity	• Binding characterization studies of ACU193 and its murine parent ACU3B3 show significant preferential selectivity for AbOs versus monomeric and amyloid plaques. – Competitive enzyme-linked immunosorbent assay, or ELISA, data show ACU193 binding to AbOs is 556-fold greater than to Ab monomer based on monomer equivalent weight. This selectivity value is even higher when adjusted for AbOs' molecular weight. – ACU193 binding in brain tissues of transgenic mice following IV dosing shows significant, preferential binding to non-fibrillar, thioflavin-S-negative Ab structures. The occasional co-localization observed with thioflavin-S-positive fibrillar plaques suggests binding to AbOs reported to surround amyloid plaques. • ACU193 binds a broad range of synthetic and human-derived low, mid, and higher molecular weight AbOs (dimers to 200-mers).
Protection from AbO-induced synaptic toxicity	• ACU193 and ACU3B3 prevent binding of AbOs to primary hippocampal neurons in vitro (the average IC50 of ACU193 is 17 nM). • ACU193 and ACU3B3 block AbOs' inhibition of long-term potentiation ex vivo. • ACU3B3 blocks AbO mediated intracellular calcium influx in vitro.
In vivo pharmacology	• ACU193 crosses the blood-brain barrier and demonstrates dose-dependent target engagement in the brain following peripheral administration of antibody. • Blinded studies in transgenic mouse models for AD over a broad range of ages show that treatment with ACU3B3 reduces multiple behavioral deficits. • QPS study of nine- to ten-month-old transgenic mice treated weekly with 20 mg/kg ACU3B3 for four weeks demonstrated significant behavioral improvements during water maze learning test. • Stanford University study of five- to seven-month-old transgenic mice treated weekly with 20 and 30 mg/kg ACU3B3 showed significant improvements during open field and Y-maze tests after four to five weeks of treatment. • Gladstone Institute studies of younger three- to five-month-old transgenic mice with sub-chronic weekly administration of ACU3B3 demonstrated significant behavioral improvements to hyperactivity, emotional response alterations and procedural learning deficits.
Safety	• GLP studies via IV route established no observed adverse effect level, or NOAEL, of 300 mg/kg/dose in a 14-week cynomolgus monkey study and 250 mg/kg/dose in a 28-day rat study. • Studies in transgenic mice indicated low potential for cerebral microhemorrhage.

Selectivity for AbOs

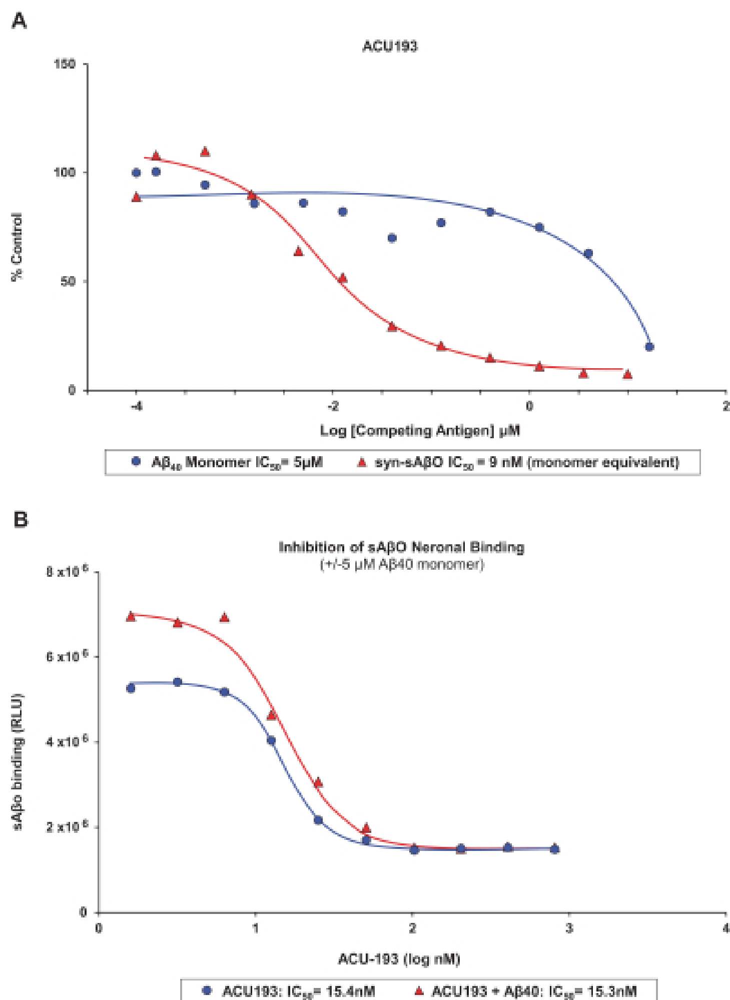
In order to understand ACU193 selectivity for AbOs, we performed biochemical assays and immunohistochemistry experiments.

Selectivity for AbOs versus Ab monomers

We demonstrated that ACU193 shows significant preferential selectivity for AbOs compared to Ab monomers. In a competition ELISA assay, ACU193's binding to AbOs was 556-fold greater than binding to Ab

monomers. Figure 3A shows comparative syn-AbO versus Ab monomer affinity data for ACU193, and illustrates the high selectivity of ACU193 for AbOs. Further evidence of ACU193 selectivity for syn-AbOs was obtained using a very high concentration of monomeric Ab, 5 µm, which did not decrease binding to syn-AbOs (Figure 3B). We believe ACU193's selectivity for AbOs in the presence of abundant Ab monomers is representative of the in vivo levels of these Ab species in AD patients. Thus, ACU193 does not experience "target distraction" from non-toxic Ab monomers in an environment simulating brain interstitial fluid.

Figure 3: [A] Competitive ELISA for ACU193 binding to syn-AbO or monomeric Ab$_{40}$ [B] 5µM monomeric Ab did not substantially change binding to syn-AbO



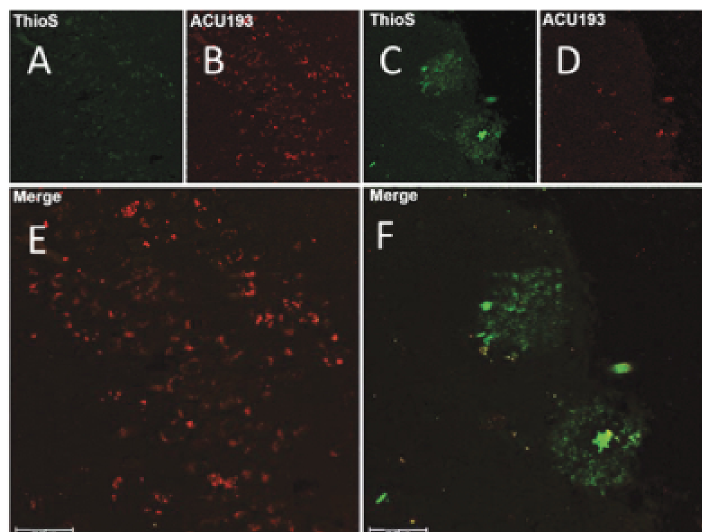
These results support the conclusion that selectivity of ACU193 for AbOs is maintained in a biochemical environment simulating the brain.

Selectivity for AbOs versus amyloid plaques

We have shown in our nonclinical data that ACU193 binds AbOs from AD patients with limited or no binding to amyloid plaques. In Figure 4 below, thioflavin S-positive b-amyloid plaques are shown in green

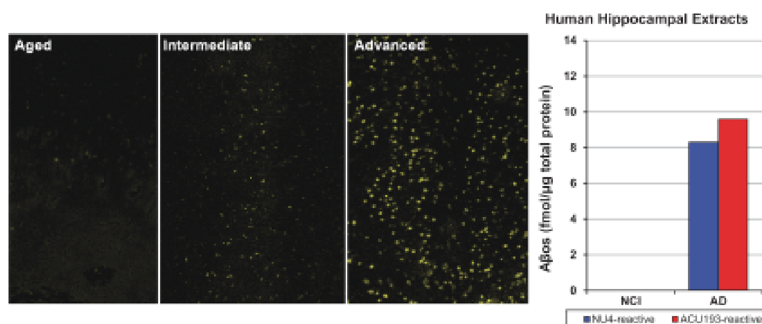
fluorescence while ACU193 binding is shown in red fluorescence. ACU193 binds significantly in regions that are thioflavin-S-negative, i.e., without amyloid plaques (Figure 4, Panels B and E), but only infrequently and minimally binds to thioflavin-S-positive fibrillar Ab structures (Figure 4, Panel D); close examination shows possible co-localization of ACU193 with thioflavin-S-positive Ab deposits in their periphery (Figure 4, Panel F). We believe the most likely explanation of ACU193 infrequent binding near the periphery of some amyloid plaques is due to binding to AbOs that surround the periphery of amyloid plaques. Taken together, these results are consistent with the concept that ACU193 binds endogenous AbOs, does not block binding by thioflavin-S, and, importantly, preferentially binds AbOs versus fibrillar Ab.

Figure 4: ACU193 binding to AbOs versus amyloid plaques



The upper left portion of the immunohistochemistry figure shows that in areas with no amyloid plaque binding (no green fluorescence staining, A) there is substantial binding by ACU193 (red fluorescence staining, B) that is not related to amyloid plaque. The merge of these panels (Panel E) shows ACU193 binding with no amyloid plaque present. On the upper right portion of the Figure, the area that is positive for amyloid plaque (green fluorescence staining, C) shows minimal ACU193 binding (red fluorescence staining, D). The merge of these panels (F) shows the minimal binding of ACU193 (red fluorescence staining) on the periphery of the amyloid plaque (green fluorescence staining), most likely related to AbO binding in the halo of the amyloid plaque.

Figure 5: AD stages based on AD neuropathic change, or ADNC, scoring

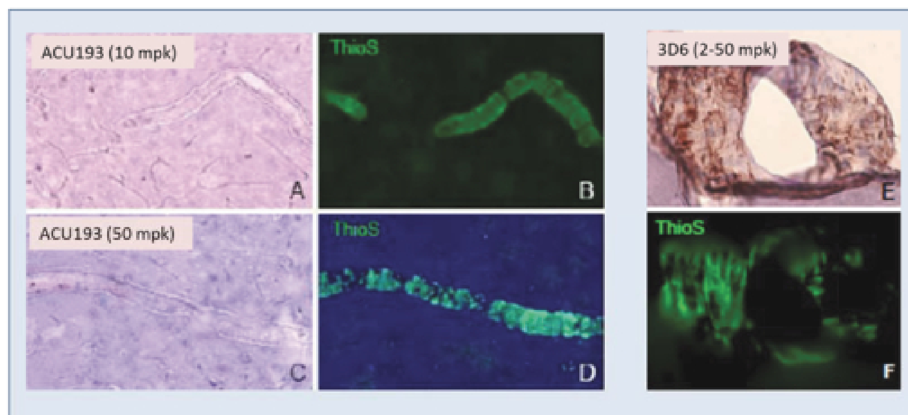


ADNC scoring is a combination of amyloid plaque levels, neuritic plaque levels, and neurogibrillary tangle pathology, or NFT, levels (Braak stage). In human tissue samples, ACU193 shows a disease state-relevant signal based on immunohistochemistry

shown on the left from aged controls, intermediate AD pathology, and advanced AD pathology. On the far-right panel, ACU193 detects AbOs in soluble hippocampal extracts from an autosomal dominant AD patient, but not from a cognitively normal patient.

Furthermore, we have demonstrated that ACU193 does not bind to amyloid plaque surrounding blood vessels (cerebral amyloid angiopathy). In a study of transgenic mice, we did not observe binding to vascular amyloid, in contrast to hu3D6 (bapineuzumab), which displayed significant binding at all dose levels.

Figure 6: ACU193 versus hu3D6 binding to vascular amyloids



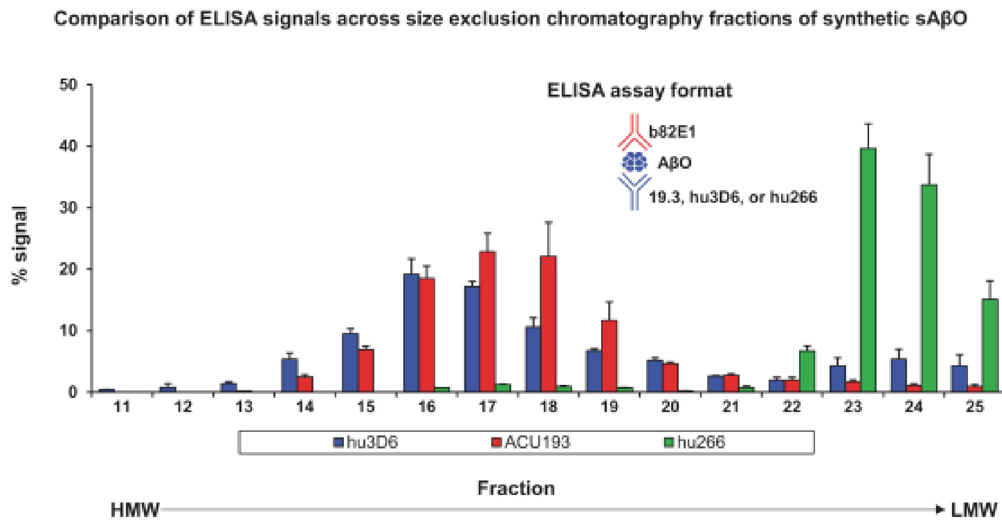
ACU193 (A and C) shows no binding to the vascular amyloid that is visible in the vessels stained by thioflavin-S (green fluorescence, B and D) in the brain 24 hours following IV dosing of 10 or 50 mg/kg in seven- to eight-month-old Tg2576 mice. In contrast, hu3D6 (bapineuzumab) binds vascular amyloid (E) at all dose levels assessed.

The data above related to vascular plaque binding support our belief that ACU193 is unlikely to have an ARIA liability. Given that the amyloid plaque-binding properties of multiple antibodies have been associated with ARIA (e.g., aducanumab, BAN2401, gantenerumab, and donanemab), we believe that ACU193's negligible binding of amyloid plaques, including amyloid plaques associated with cerebral amyloid angiopathy, provides evidence that ARIA is unlikely to be associated with this antibody.

Binding to a broad spectrum of molecular weight AbOs

In addition, we demonstrated that ACU193 binds a broad spectrum of AbOs across various molecular weights. In another series of experiments, syn-AbOs were fractionated by size exclusion chromatography and characterized by ELISA using ACU193, hu3D6 (bapineuzumab) or hu266 (solanezumab) as the capture antibody and biotinylated anti-human Ab antibody 82E1 for detection. These data show ACU193 binds mid to higher molecular weight AbOs, with preferential binding to mid-molecular weight oligomers compared to hu266. This range of molecular weights is very similar to the range of molecular weights of oligomers thought to be most toxic.

Figure 7. Binding of humanized antibodies to size exclusion chromatography fractions of synthetic Ab species



Size exclusion chromatography fractionation of syn-AbO prep with sandwich ELISA detection. hu3D6 is also known as bapineuzumab; hu266 is also known as solanezumab. These data demonstrate the specificity of ACU193 for oligomers versus monomers, and also demonstrate a range of oligomers that are bound by ACU193.

Collectively the data show that ACU193 binds AbOs with 556-fold selectivity versus Ab monomers and demonstrates limited to no binding to amyloid plaques, but does bind to a broad range of synthetic and endogenous low, mid, and higher molecular weight AbOs. Based on these and other data, we believe that ACU193 can target therapeutically relevant AbOs in the brain of early AD patients.

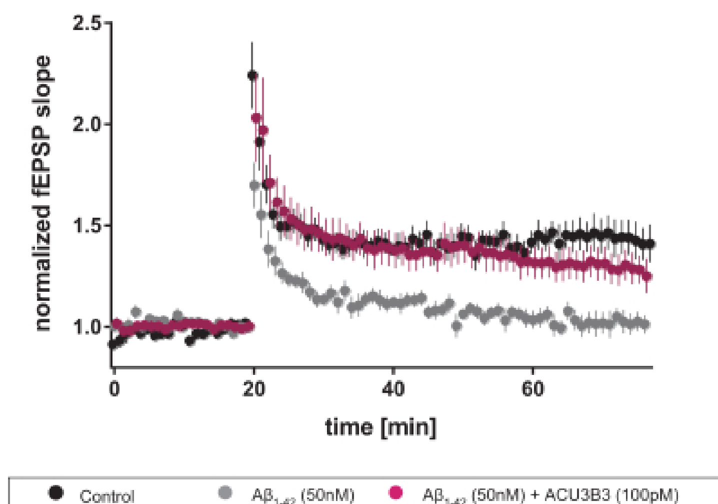
Protection from AbO-induced synaptic toxicity

In order to understand ACU193's ability to either neutralize or limit AbO-induced physiological changes, we performed ex vivo studies using brain slices or cell cultures.

Prevention of AbO toxic effects on neuronal electrophysiology

In ex vivo studies using the murine hippocampal slice LTP model, pre-incubation with ACU193 or ACU3B3 has been shown to prevent the LTP deficit caused by AbOs (formed by administration of 50nM Ab1-42). Long term potentiation is an electrophysiological phenomenon demonstrated in neurons that may be associated with memory formation and other important neurological functions. Disruption of LTP has been associated with animal models in a variety of central nervous system disease states.

Figure 8. Effects of ACU3B3 and ACU193 on AbO-induced change in LTP

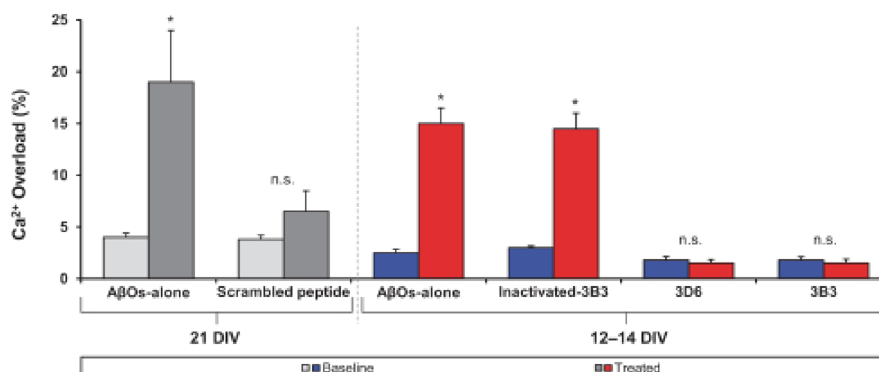


Note that AbOs disrupted normal LTP findings, but that pre-incubation with ACU3B3 prevented that disruption.

Prevention of toxic effects of AbOs on calcium homeostasis

Exposure to ACU3B3 has been shown to prevent calcium overload in cortical neuronal cultures induced by direct application of syn-AbOs (Figure 9). Disruptions in calcium homeostasis that cause cellular dysfunction have been implicated in a number of disease states, including myocardial infarction and stroke. Further, AbOs have been shown to cause disruption of calcium homeostasis, and thus, restoration of intracellular calcium to normal levels could serve as a functional indicator of potential treatment effect in AD. Multiphoton microscopy was used to examine the relationship of syn-AbO and neuronal calcium homeostasis in vitro (Figure 9). Direct application of syn-AbOs elicited calcium elevations in cortical neuronal cultures. Prior exposure to antibodies ACU3B3 and 3D6 prevented this calcium elevation (Figure 9). These results demonstrate that syn-AbOs induce elevated concentrations of intracellular neuronal calcium and that ACU3B3 prevented the syn-AbO-induced calcium overload.

Figure 9: Effect of ACU3B3 on calcium homeostasis



The relationship of syn-AbO and neuronal calcium homeostasis in the presence and absence of ACU3B3 was studied in primary cultures of transgenic APP-PS1 mouse cortical neurons. Multiphoton microscopy was used to obtain images of neuronal cultures at 12–14 days in vitro, or DIV, or 21 DIV. Cortical regions were identified and reimaged before and after topical applications of syn-AbOs to allow comparison of resting calcium within the same neuronal compartments. After baseline calcium was obtained, the cultures were treated with antibody-immunodepleted syn-AbOs (1 mL of 3 nM syn-AbOs with 9 µg of antibody) or syn-AbOs alone for 45 minutes. The cultures were then re-imaged in the same areas in the dish. Taken together, these studies show that ACU3B3 prevents the toxic effect of AbOs on calcium homeostasis.

In Vivo Pharmacology

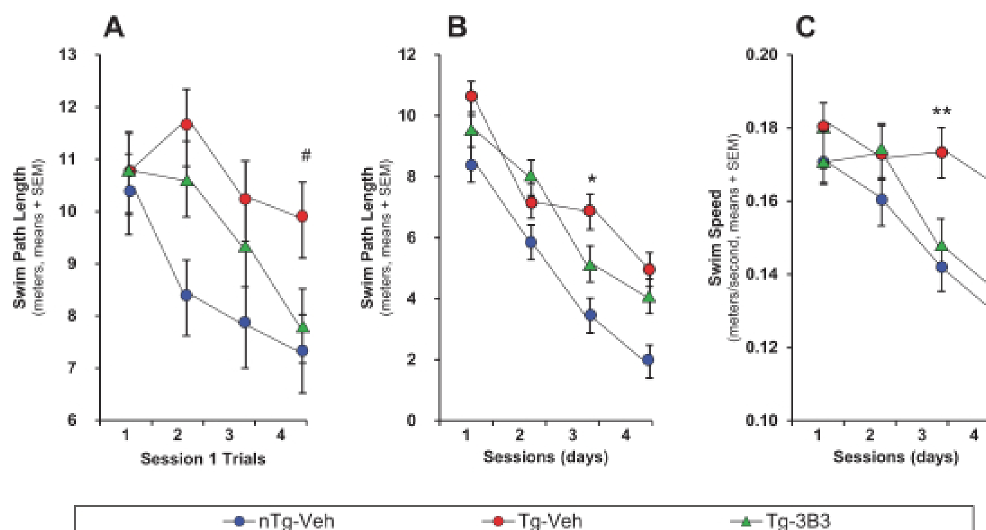
In order to understand the effects of ACU193 in intact animals, we performed behavioral studies in transgenic mice with genetic alterations that overproduce a mutant amyloid precursor protein that forms amyloid plaques. The transgenic mouse models are generally based on autosomal dominant mutations in the APP gene causing rare forms of human AD. Transgenic mouse models using these mutations may not cause the full spectrum of AD pathology, but they do provide relevant animal models for drug development in AD.

In vivo behavioral studies in multiple transgenic mouse models for AD

The behavioral studies described below, performed at three different laboratories, indicate in vivo central pharmacologic activity of peripherally administered ACU3B3. The behavioral effects seen in these studies indicate that sufficient amounts of ACU3B3 cross the blood-brain barrier to engage the target, resulting in behavioral improvements in these transgenic mice. The Phase 1 clinical trial includes doses in the range used in these nonclinical studies.

A study conducted at QPS and using nine- to ten-month-old APP/SL transgenic mice treated weekly with 20 mg/kg ACU3B3 for four weeks demonstrated statistically significant behavioral improvements in swim path length and swim speed during the water maze learning test (Figure 10).

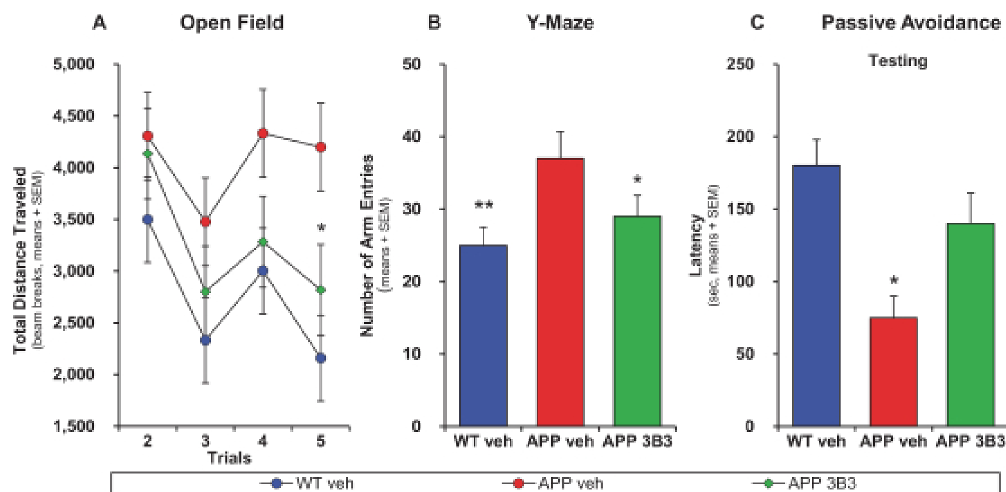
Figure 10: Results of ACU3B3 treatment in mice study



ACU3B3 treatment in nine- to ten-month-old APPSL mice (n=10/group) improves performance on the first day of water maze training (A; p=0.057), decreases swim path length (B; p=0.034), and reverses a swim speed abnormality (C; p<0.02).

In a separate study conducted at Stanford University, the hyperactivity phenotype of five- to seven-month-old Thy1-hAPP/SL transgenic mice in the open field and Y-maze tests was also significantly reduced after four to five weeks of treatment with ACU3B3 (20 and 30 mg/kg, weekly). Prior to dosing, Thy1-hAPP/SL mice showed increased activity in the activity chamber compared to wild-type mice. After treatment with ACU3B3, Thy1-hAPP/SL mice activity fell to a level comparable to wild-type mice, particularly activity in the center of the test arena (Figure 11A). Similar effects of ACU3B3 were found with changes in Y-maze behavior (Figure 11B) and passive avoidance (Figure 11C).

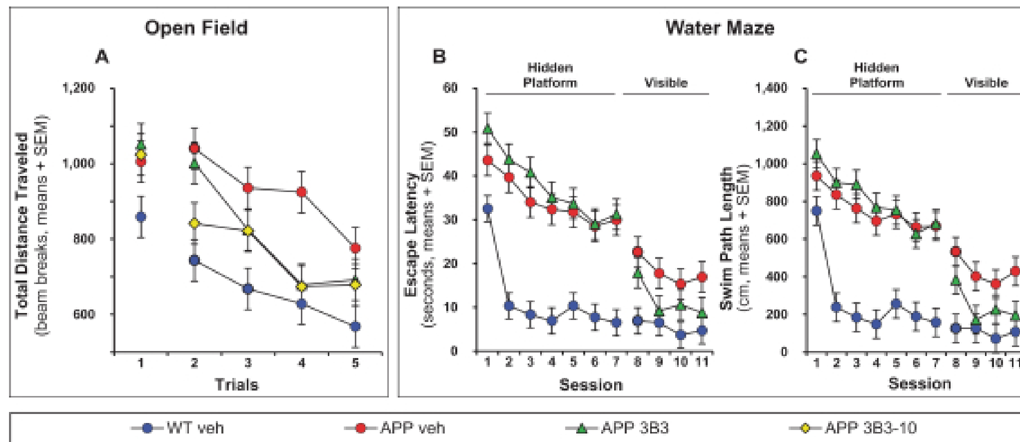
Figure 11: ACU3B3 treatment at 20 mg/kg in five- to seven-month-old Thy1-hAPP/SL mice (n=13-14/group, means + SEM)



[A] Open field total distance measurement, APP-Veh vs. APP-3B3, *p=0.029. [B] Y-maze arm entries, APP-Veh vs APP-3B3, *p=0.045; APP-Veh vs WT-Veh, **p=0.007. [C] Passive avoidance latency, APPSL-APP3B3 vs. APPSL-Veh trended for drug effect, but was not statistically significant.

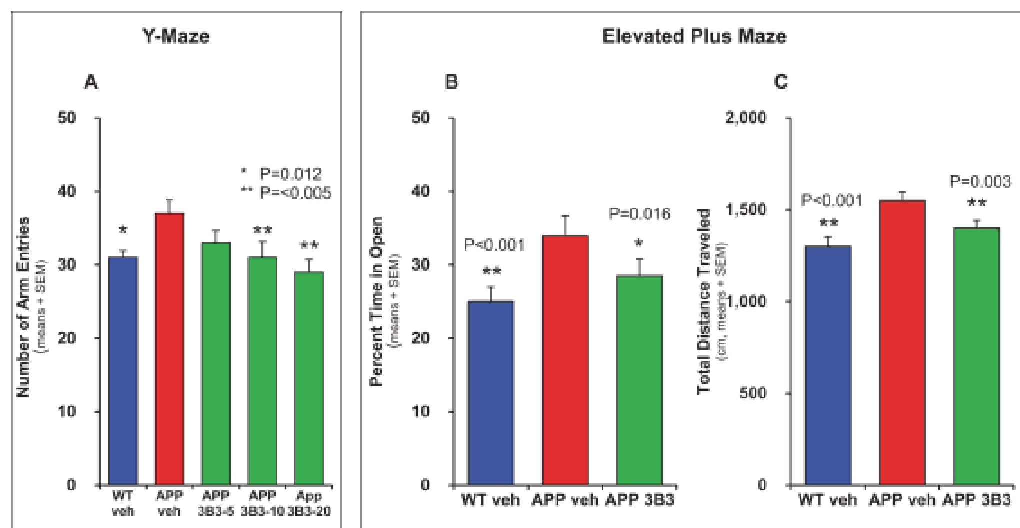
In separate studies conducted at the Gladstone Institute in young three- to five-month-old hAPP/J20 mice, behavioral abnormalities in these mice were reduced after chronic treatment with ACU3B3. Treatment ameliorated the hyperactivity phenotype, emotional response alterations and procedural learning deficits in this mouse model and hyperactivity in the Y-maze test was reduced dose-dependently (5 < 10 = 20 mg/kg) (Figure 12).

Figure 12: Open field and water-maze behavior in three- to five-month-old hAPP/J20 mice following repeat weekly IP dosing with ACU3B3 (n=13-14/group)



[A] Open field activity after four weekly doses. [B], [C] Water-maze behavior following eight weekly doses.

Figure 13: Y-maze and elevated plus-maze behavior in three- to five-month-old hAPP/J20 mice following repeat, weekly IP dosing with ACU3B3 (n=13-14/group)



[A] Y-maze activity after six weekly doses. [B], [C] Elevated plus-maze behavior following nine weekly doses.

Taken together, these behavioral studies, performed at three different laboratories, indicate in vivo central pharmacologic activity of peripherally administered ACU3B3. The behavioral effects seen in these studies indicate that sufficient amounts of ACU3B3 cross the blood-brain barrier to engage the target, resulting in behavioral improvements in these transgenic mice. The range of doses used in these nonclinical studies is covered in the Phase 1 clinical trial.

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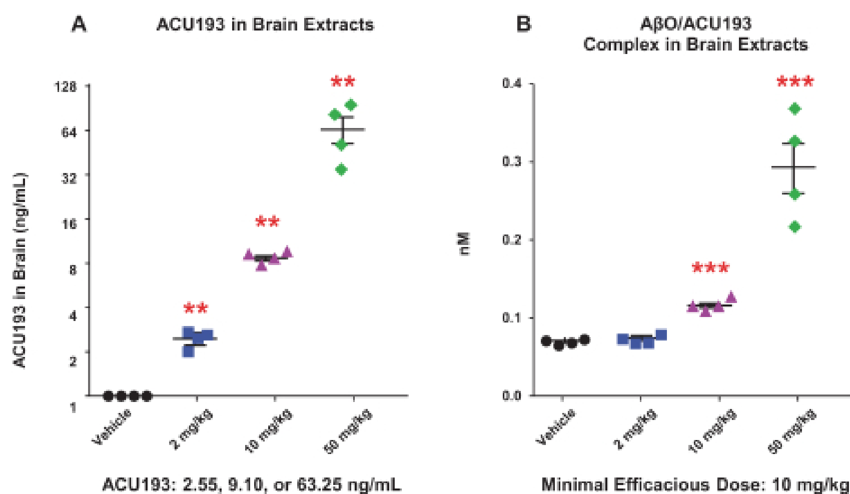
Pharmacokinetics and Pharmacodynamics

ACU193 has demonstrated favorable pharmacokinetics and pharmacodynamics based on a number of nonclinical studies. ACU193 could be detected in plasma, CSF, and brain tissue of Tg2576 mice, rats, dogs, and rhesus monkeys following IV injection. Penetration of ACU193 into the brain was demonstrated by direct measurements of brain levels in Tg2576 mice, rats, and dogs, and by measurements of CSF levels in rats and rhesus monkeys. Brain levels were approximately 0.02% of plasma levels and CSF levels ranged from 0.05 to 0.15% of plasma levels, showing penetration of ACU193 into the brain. Toxicokinetic data collected as part of GLP toxicity studies in Sprague Dawley rats and cynomolgus monkeys showed clearance of 1 to 3 mL/h/kg and terminal half-life of approximately seven days.

Brain penetration and in vivo binding of ACU193 was explored in seven-month-old Tg2576 mice dosed intravenously with 2, 10 and 50 mg/kg of ACU193 or hu3D6 (bapineuzumab), and perfused brain tissue was collected 24 hours after dosing for analysis. A dose dependent increase in brain levels of ACU193 (Figure 14A) and ACU193/AbO complex (Figure 14B) was demonstrated, with a minimum effective dose for target engagement of 10 mg/kg.

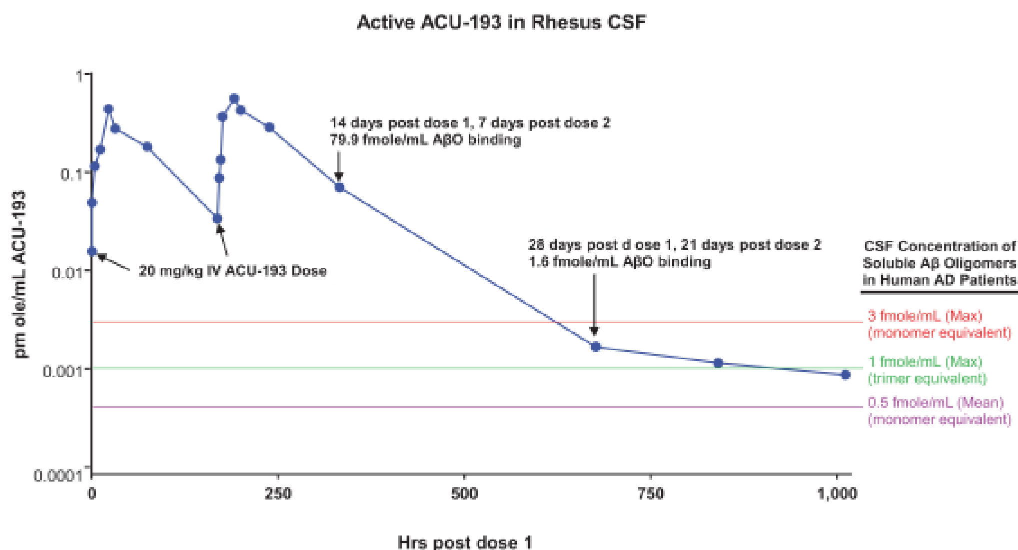
Figure 14: Levels of ACU193 and AbO/ACU193 complexes in the brain 24 hours following IV dosing in seven-month-old Tg2576 mice (n = 4/cohort)



These results show ACU193 can penetrate the blood-brain barrier and bind endogenous AbOs.

Additionally, a study of pharmacokinetics in CSF was conducted in rhesus monkeys. An intrathecal catheter was implanted in the monkeys, and two doses at 20 mg/kg IV were administered. As shown in Figure 15, the concentrations of ACU193 in CSF should provide adequate target engagement with every four week dosing.

Figure 15: Comparison of ACU193 levels in rhesus CSF to CSF Levels of AbO in human AD patients



Following two doses of 20 mg/kg ACU193 CSF concentrations were sufficient to provide target engagement at 28 days. An estimate of 1 fmole/mL for oligomer concentration is conservative given that it is based on oligomers consisting of trimers.

Safety Profile

Good Laboratory Practice studies using IV administration of ACU193 established a no-observed-adverse-effect level, or NOAEL, of 250 mg/kg/dose, which was the maximum feasible dose, given every two weeks in a 28-day study in Sprague-Dawley rats. The NOAEL in cynomolgus monkeys was 300 mg/kg/dose in a 14-week study in cynomolgus monkeys using IV dosing every two weeks. In Sprague Dawley rats, no adverse findings were noted. In the 14-week study in cynomolgus monkeys, doses of 60, 300, or 600 mg/kg/dose ACU193 once every two weeks were administered. Three animals administered the highest 600 mg/kg/dose were sacrificed early for humane reasons on Days 43 or 60 due to ACU193-related, anaphylactoid-type reactions. Thus, the 300 mg/kg/dose is considered the NOAEL for cynomolgus monkeys. The NOAELs of 300 mg/kg and 250 mg/kg compare favorably to the highest dose of ACU193 being used in our Phase 1 clinical trial (60 mg/kg).

Based in part on binding to AbOs rather than amyloid plaque, ACU193 has the potential to have a lower rate of ARIA than plaque-clearing anti-amyloid antibodies. Additionally, ACU3B3 showed no apparent increased risk of microhemorrhage when administered in vivo for three months in aged Tg2576 mice, as compared with 3D6, a plaque binding antibody used as a positive control.

With regard to effector function and possible inflammatory effects generally, ACU193 is an IgG2m4 subclass antibody which lacks inflammatory effector function signaling stimulated by other IgG subclasses. Thus, the risk for inflammatory effector function using ACU193 is considered to be low.

Investigational New Drug Application

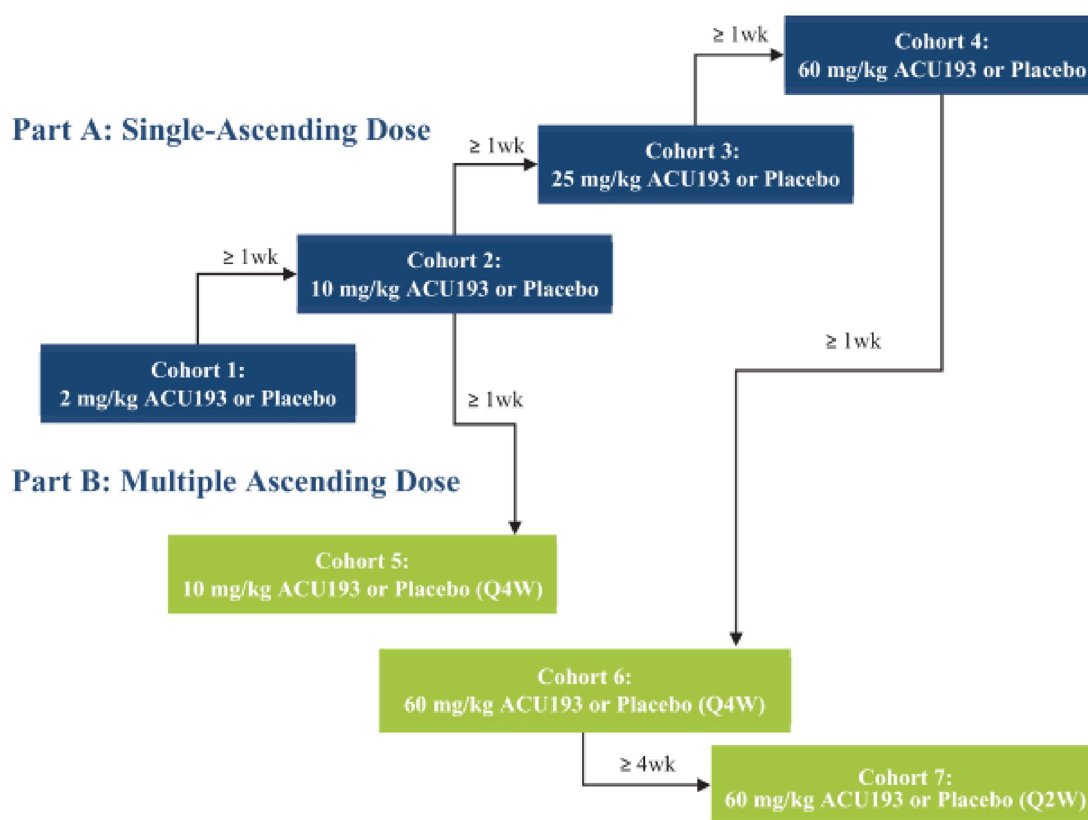
In October 2020, we submitted an investigational new drug, or IND, application for ACU193 to the FDA. The FDA initially placed the IND on clinical hold until we were able to address the FDA's concerns regarding potential off-target binding of ACU193 with an additional nonclinical tissue cross reactivity (TCR) study in human, monkey, and rat samples. The supplemental TCR study supported the in-vivo GLP safety results. On April 9, 2021, we received an FDA letter advising us that the clinical hold had been removed and authorizing us to proceed with a first-in-human, Phase 1 clinical trial.

Clinical Development Plan

Phase 1 Clinical Trial in AD

In the second quarter of 2021, we initiated a multi-center, randomized, placebo-controlled, single and multiple ascending dose Phase 1 clinical trial of ACU193 in 62 patients with early AD. The early AD patient set is comprised of individuals who have mild dementia or MCI due to AD. Patients with moderate to severe dementia will not be included. The main objectives of the trial are to evaluate the safety, tolerability, pharmacokinetics, and target engagement of single and multiple ascending doses of ACU193 administered by IV infusion. Pharmacodynamics effects including cognitive testing will be performed on an exploratory basis. The trial will be conducted in two overlapping parts: Part A (the single ascending dose portion) and Part B (the multiple ascending dose portion).

Figure 16: Design of Study ACU-001



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Trial Design Part A – Single Ascending Dose

We expect to enroll 32 participants in Part A of our clinical trial, with the participants randomized in a 6:2 ratio into one of four cohorts to receive a single dose of ACU193 or placebo as follows:

- Cohort 1: One IV dose of ACU193 (2 mg/kg) or placebo.
- Cohort 2: One IV dose of ACU193 (10 mg/kg) or placebo.
- Cohort 3: One IV dose of ACU193 (25 mg/kg) or placebo.
- Cohort 4: One IV dose of ACU193 (60 mg/kg) or placebo.

The double-blind treatment period for Cohorts 1-4 of Part A will be approximately 20 weeks and will include ten visits (four inpatient and six outpatient). A sequential dosing scheme will be followed for each cohort in Part A. Dosing of Cohorts 1-3 will begin at least one week after all participants in the immediately preceding lower-dose cohort have received one administration of study drug and safety data have been reviewed by our internal blinded safety team. Dosing of Cohort 4 will begin at least one week after all participants in Cohort 3 have received one administration of study drug and these safety data, along with Cohort 2 aggregate pharmacokinetic data, have been reviewed by our internal blinded safety team. An unblinded, independent Data Monitoring Committee, or DMC, will also monitor the trial and can review safety data on an ad hoc basis if requested by the blinded study team.

Trial Design Part B – Multiple Ascending Dose

We expect to enroll 30 participants in Part B of our clinical trial, with the participants randomized in an 8:2 ratio into one of three cohorts to receive a total of three doses of ACU193 or placebo as follows:

- Cohort 5: One IV dose of ACU193 (10 mg/kg) or placebo once every four weeks.
- Cohort 6: One IV dose of ACU193 (60 mg/kg) or placebo once every four weeks.
- Cohort 7: One IV dose of ACU193 (60 mg/kg) or placebo once every two weeks.

Participants in Cohorts 5 and 6 will be evaluated over approximately 35 weeks, consisting of a seven-week screening period followed by a 28-week, double-blind treatment period. A follow-up safety check will be performed approximately eight weeks after the final visit of the double-blind treatment period.

Participants in Cohort 7 will be evaluated over approximately 31 weeks, consisting of a seven-week screening period, followed by a 24-week, double-blind treatment period. A follow-up safety check will be performed approximately eight weeks after the final visit of the double-blind treatment period.

In order to maintain participant safety for Part B of the clinical trial, dosing of Cohort 5 will begin at least one week after all participants in Cohort 2 of Part A have received one administration of ACU193 or placebo and the Cohort 2 safety data have been reviewed by our internal blinded safety team. For Cohort 6, dosing will begin at least one week after all participants in Cohort 4 of Part A have received one administration of ACU193 or placebo and the Cohort 4 safety data have been reviewed by our internal blinded safety team. Dosing of Cohort 7 will begin after four or more participants in Cohort 6 have been administered two doses of ACU193 or placebo and the Cohort 6 safety data, along with aggregated pharmacokinetic data from Cohort 4, have been reviewed by our internal blinded safety team. If a potential safety signal, an unexpected adverse reaction, or higher than expected exposure occurs, our internal blinded safety team will notify the independent, unblinded DMC to review the safety and pharmacokinetic data and advise on dose escalation. Cohort 7 will allow for additional pharmacokinetic modeling to more accurately determine the half-life of ACU193 if every two-week dosing is necessary.

Endpoints

Our goal for the Phase 1 trial is to establish clinical proof of mechanism of ACU193 in patients with early AD. The endpoints we will measure as part of this trial include:

Primary Endpoint

- safety and immunogenicity, including assessment for ARIA;

Secondary Endpoints and Exploratory Objectives

- pharmacokinetics in plasma;
- determination of CSF concentrations of ACU193;
- evaluation of central target engagement as measured by levels of ACU193 AbO complex in CSF;
- evaluation of possible changes in concentration of biomarkers for AD in CSF or blood;
- evaluation of possible changes in amyloid plaque load as determined by PET imaging;
- evaluation of possible changes in cerebral blood flow as determined by MRI imaging, using Arterial Spin Labeling (ASL) pulse sequence; and
- evaluation of possible changes in cognitive, functional, and behavioral measures using computerized testing and standard clinical measures for AD.

We expect to report proof of mechanism results by the fourth quarter of 2022, with periodic updates including trial progress and cohort advancement. Safety will be evaluated periodically during the trial both by a blinded study team and an unblinded monitoring committee.

Future Clinical Trials

Subject to establishment of proof of mechanism of ACU193 and the safety and immunogenicity results of the Phase 1 clinical trial, we intend to advance ACU193 into later stage clinical trials. We plan to explore a proposed therapeutic dose of ACU193 in a future Phase 2/3 clinical trial based on safety, pharmacokinetics and pharmacodynamics assessments of the various dosing cohorts in the Phase 1 trial. The Phase 2/3 trial is being designed as an adaptive trial, such that after a planned interim analysis of clinical and biomarker changes, a decision could be made to increase the enrollment of the trial to be adequately powered as a Phase 3 pivotal trial, or to continue the trial as a Phase 2 clinical trial. The Phase 2/3 trial will utilize standard cognitive measures that are widely employed in AD trials and most highly sensitive to changes in mild AD patients, including ADAS-COG 13, CDR-sb, ADCS-iADL, iADRS, MMSE, and potentially others including computerized neuropsychological testing. Additionally, a number of biomarkers may be studied including blood flow as determined by ASL pulse sequence on MRI, plasma or CSF p-tau, amyloid PET scanning, and tau PET scanning. Selected endpoints will be used to inform the interim decision whether to expand the trial and whether to initiate a second Phase 3 clinical trial.

Combination Potential

While ACU193, if successful, will likely be a foundational treatment for people with early AD, it also could be used as part of a combination treatment regimen. The pathology of AD is complex, and many experts in the field expect that combination therapy using drugs with different mechanisms of action, such as tau, immune modulation, glial cells such as microglia and astrocytes, and growth factors, will ultimately prove most successful, similar to cutting edge approaches used in oncology. In addition, because symptomatic treatments, such as memantine and cholinesterase inhibitors, affect neurotransmitter systems rather than the underlying AD pathology, we believe that it is likely that they will be used together with disease-modifying treatments.

Manufacturing

We do not currently own or operate facilities for product manufacturing, storage and distribution, or testing. We contract with third parties for the manufacture of ACU193. Because we rely on contract manufacturers, we employ personnel with extensive technical, manufacturing, analytical and quality experience. Our staff has strong project management discipline to oversee contract manufacturing and testing activities, and to compile manufacturing and quality information for our regulatory submissions.

Manufacturing is subject to extensive regulation that imposes various procedural and documentation requirements and that governs record keeping, manufacturing processes and controls, personnel, quality control and quality assurance, and more. Our systems and our contractors are required to be in compliance with these regulations, and compliance is assessed regularly through monitoring of performance and a formal audit program.

Our current supply chains for ACU193 involve several manufacturers that specialize in specific operations of the manufacturing process, including raw materials manufacturing, drug substance manufacturing and drug product manufacturing. We currently operate under work order programs for ACU193 with master services agreements in place that include specific supply timelines, volume and quality specifications. We believe our current manufacturers have the scale, the systems, and the experience to supply our currently planned clinical trials.

Competition

We face competition from several different institutions, including pharmaceutical and biotechnology companies, research institutions, governmental organizations and universities developing novel therapies for AD. We believe that the key factors affecting the clinical and commercial success of ACU193 will include safety profile, efficacy, cost, method of administration, level of marketing activity, insurance reimbursement and intellectual property protection.

If approved, ACU193 will compete with therapies currently approved for the treatment of AD, which have primarily been developed to treat the symptoms of AD rather than the underlying cause of the disease, such as memantine and cholinesterase inhibitors. ACU193 may also compete with one or more potentially disease-modifying therapeutics currently in development that target Ab or amyloid plaques, the most advanced of which is Biogen Inc.'s aducanumab, for which regulatory approval is pending in the United States, Europe and Japan. Other companies known to be developing therapies with Ab/amyloid plaque-related targets include Alzheon, Inc., Alzinova AB, Chugai Pharmaceutical Co. Ltd., Cognition Therapeutics, Inc., Eisai Co., Ltd., Eli Lilly and Company, Grifols, S.A., KalGene Pharmaceuticals, Inc., Neurimmune AG, Novartis AG, ProMIS Neurosciences, Inc., Prothena Biosciences, Inc., Roche Holding AG (including Genentech, its wholly owned subsidiary) and Wren Therapeutics, Inc. Additionally, ACU193, if approved, may also compete with other potential therapies intended to address underlying causes of AD that are being developed by several companies, including AbbVie Inc., AC Immune SA, Alector, Inc., Anavex Life Sciences Corp., Annovis Bio, Inc., Athira Pharma, Inc., Biohaven Pharmaceuticals, Inc., Cassava Sciences, Inc., Cortexyme, Inc., Denali Therapeutics, Inc., Johnson & Johnson (including Janssen, its wholly-owned subsidiary) and Takeda Pharmaceutical Co. Ltd.

Collaboration Agreement with Merck

In December 2003, we entered into an exclusive license and research and development collaboration agreement with Merck to research, discover and develop certain technology related to amyloid beta-derived diffusible ligands, or ADDL, which agreement was amended and restated in October 2006. The agreement generally provided that, during the course of the collaboration, Merck would be responsible for the preclinical and clinical development and commercialization of any products covered by the agreement and, in return, we were eligible to receive potential nonclinical, clinical and regulatory milestone payments and royalties on future

product sales. During the collaboration, Merck developed ACU193, an ADDL antibody, and intellectual property related to ACU193 was filed by Merck. In 2011, Merck elected to voluntarily terminate the collaboration agreement. Pursuant to the surviving provisions of the agreement, effective upon termination of the collaboration, Merck granted us an exclusive, perpetual, irrevocable, royalty-free, worldwide license, with right to sublicense, under Merck's interest in the patent rights and know-how necessary for the research, development, manufacturing or commercialization of ADDL antibodies, ADDL antigens or products, including ACU193.

Intellectual Property

Our intellectual property is critical to our business and we strive to protect it, including by obtaining and maintaining patent protection in the United States and internationally for our product candidate. We also rely on the skills, knowledge and experience of our scientific and technical personnel, as well as that of our advisors, consultants and other contractors. To help protect our proprietary know-how that is not patentable, we rely on confidentiality agreements to protect our interests. We require our employees, consultants, scientific advisors and contractors to enter into confidentiality agreements prohibiting the disclosure of confidential information and requiring disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business.

The main form of commercial exclusivity for our product candidate, ACU193, is expected to come from biologic regulatory exclusivity. We expect that once approved by regulatory agencies, ACU193 will receive the benefit of 12 years of market exclusivity in the U.S. and 10 to 11 years of data and market exclusivity in Europe, in each case, against competitors seeking approval for a biosimilar product.

We have an exclusive license grant from Merck to patents claiming the composition and method of use of our product candidate, ACU193. The license grant arose from our collaboration agreement with Merck to research, discover, and develop technology related to ADDLs. During our collaboration, ACU193, an ADDL antibody, was developed and intellectual property was filed by Merck. In 2011, the collaboration agreement terminated and Merck exclusively licensed to Acumen, Merck's interest in patent rights claiming ADDL antibodies, including ACU193, ADDL Antigens and/or Products to Acumen. In the nine years subsequent to the termination of the collaboration with Merck, Acumen has controlled and directed and continues to control and direct prosecution of the licensed ACU193 patent portfolio. Acumen has also paid for and continues to pay all costs and fees associated with the prosecution and maintenance of the licensed ACU193 patent portfolio.

As of November 6, 2020, Acumen licenses from Merck 1 issued U.S. patent, 16 issued foreign patents including issued patents in China, Canada, Australia, Japan, France, Germany and the UK, and two pending foreign applications drawn to our product candidate, ACU193. These patents and patent applications, once issued, are projected to expire in July of 2031, without taking into account any possible extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Throughout the development of our product candidate, we seek to identify additional means of obtaining patent protection that would potentially enhance commercial success, including by protecting inventions related to additional methods of use, processes of making, formulation, and dosing regimens.

Patent Term and Term Extensions

The terms of individual patents are determined based primarily on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, utility patents issued for applications filed in the United States are granted a term of 20 years from the earliest effective filing date of a non-provisional patent application. In addition, in certain instances, the term of a U.S. patent can be extended to recapture a portion of the United States Patent and Trademark Office, or USPTO, delay in issuing the patent as well as a portion of the term effectively lost as a result of the FDA regulatory

review period. However, as to the FDA component, the restoration period cannot be longer than five years and the restoration period cannot extend the patent term beyond 14 years from FDA approval for the product covered by that patent. In addition, only one patent applicable to an approved drug may receive the extension, and the extension applies only to coverage for the approved drug, methods for using it and methods of manufacturing it, even if the claims cover other products or product candidate. Where one patent covers multiple products or product candidate, it may only receive an extension for one of the covered products; any extension related to a second product or product candidate must be applied to a different patent. The duration of foreign patents varies in accordance with provisions of applicable local law, but typically is also 20 years from the earliest effective filing date of a non-provisional patent application, such as a Patent Cooperation Treaty, or PCT, application. All taxes, annuities or maintenance fees for a patent, as required by the USPTO and various foreign jurisdictions, must be timely paid in order for the patent to remain in force during this period of time.

The actual protection afforded by a patent may vary on a product-by-product basis, from country to country, and can depend upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions and the availability of legal remedies in a particular country and the validity and enforceability of the patent.

Our patents and patent applications may be subject to procedural or legal challenges by others. We may be unable to obtain, maintain and protect the intellectual property rights necessary to conduct our business, and we may be subject to claims that we infringe or otherwise violate the intellectual property rights of others, which could materially harm our business. For more information, see the section titled “Risk Factors—Risks Related to Our Intellectual Property.”

Trademarks and Know-How

In connection with the ongoing development and advancement of our products and services in the United States and various international jurisdictions, we seek to create protection for our marks and enhance their value by pursuing trademarks and service marks where available and when appropriate. We rely upon know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, by using confidentiality agreements with our commercial partners, collaborators, employees and consultants, and invention assignment agreements with our employees and consultants. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed by our employees and through relationships with third parties. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our contractors, commercial partners, collaborators, employees and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions. For more information, see the section titled “Risk Factors—Risks Related to Our Intellectual Property.”

Government Regulation

The FDA and other regulatory authorities at federal, state, and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring, and post-approval reporting of biologics such as those we are developing. We, along with our third-party contractors, will be required to navigate the various preclinical, clinical, manufacturing and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable regulatory requirements at any time during the product development process or post-

approval may subject an applicant to delays in development or approval, as well as administrative and judicial sanctions.

U.S. Biologics Regulation

In the United States, biological products are subject to regulation under the Federal Food, Drug, and Cosmetic Act, or FDCA, the Public Health Service Act, or PHSA, and other federal, state, local and foreign statutes and regulations. The process required by the FDA before biologics may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests and animal studies performed in accordance with the FDA's Good Laboratory Practice requirements, or GLPs;
- submission to the FDA of an investigational new drug application, or IND, which must become effective before clinical trials may begin and must be updated annually and when certain changes are made;
- approval by an institutional review board, or IRB, or independent ethics committee at each clinical site before the trial is commenced;
- performance of adequate and well-controlled human clinical trials in accordance with Good Clinical Practice, or GCP, requirements and other clinical trial-related regulations to establish the safety, purity and potency of the proposed biologic product candidate for its intended purpose;
- preparation of and submission to the FDA of a biologics license application, or BLA, after completion of all pivotal clinical trials;
- payment of user fees for FDA review of the BLA;
- satisfactory completion of an FDA Advisory Committee review, if applicable;
- a determination by the FDA within 60 days of its receipt of a BLA to file the application for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with current Good Manufacturing Practices, or cGMPs, and to assure that the facilities, methods and controls are adequate to preserve the biological product's continued safety, purity and potency, and of selected clinical investigation sites to assess compliance with GCPs; and
- FDA review and approval of the BLA to permit commercial marketing of the product for particular indications for use in the United States.

Preclinical and Clinical Trials

Prior to beginning the first clinical trial with a product candidate in the United States, the product candidate must undergo rigorous preclinical testing. Preclinical studies include laboratory evaluations of chemistry, formulation and stability, as well as *in vitro* and animal studies to assess safety and in some cases to establish the rationale for therapeutic use. The conduct of preclinical studies is subject to federal and state regulations and requirements, including GLP requirements for safety and toxicology studies. In the United States, the results of the preclinical studies, together with manufacturing information and analytical data must be submitted to the FDA as part of an IND. An IND is a request for authorization from the FDA to administer an investigational new drug to humans. The central focus of an IND submission is on the general investigational

plan and the protocol(s) for clinical studies. The IND also includes results of animal and *in vitro* studies assessing the toxicology, pharmacokinetics, pharmacology, and pharmacodynamic characteristics of the product; chemistry, manufacturing, and controls information; and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the dosing procedures, subject selection and exclusion criteria, and the parameters and criteria to be used in monitoring safety and effectiveness. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed.

While clinical trials are ongoing, the FDA may impose a partial or complete clinical hold based on concerns for patient safety and/or noncompliance with regulatory requirements. This order issued by the FDA would cause the suspension of an ongoing study, or part of an ongoing study, until all outstanding concerns have been adequately addressed, and the FDA has notified the company that investigations may proceed. Imposition of a clinical hold could cause significant delays or difficulties in completing planned clinical studies in a timely manner. In addition, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries. In the United States, information about applicable clinical trials, including clinical trials results, must be submitted within specific timeframes for publication on the www.clinicaltrials.gov website.

Progress reports detailing the results of the clinical trials, among other information, must be submitted at least annually to the FDA. Written IND safety reports must be submitted to the FDA and the investigators fifteen days after the trial sponsor determines the information qualifies for reporting for serious and unexpected suspected adverse events, findings from other studies or animal or in vitro testing suggest a significant risk for human participants exposed to the drug or biologic, or for any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must also notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction as soon as possible but in no case later than seven calendar days after the sponsor’s initial receipt of the information.

For purposes of BLA approval, human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1—The investigational product is initially introduced into a limited population of healthy human subjects or patients with the target disease or condition. These studies are designed to test the safety, dose response, absorption, metabolism and distribution of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.

- Phase 2—The investigational product is administered to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.

- Phase 3—The investigational product is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval. Generally, two adequate and well-controlled Phase 3 clinical trials are required by the FDA for approval of a BLA.

In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies may also be made a condition to approval of the BLA.

Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the biological characteristics of the product candidate, and must finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality and purity of the final product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life and to identify appropriate storage conditions for the product candidate.

BLA Submission and Review by the FDA

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. The BLA must include data available from preclinical and clinical studies, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. Data can come from company-sponsored clinical studies intended to test the safety and effectiveness of a use of the product, or from a number of alternative sources, including studies initiated by independent investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety, purity and potency of the investigational biologic, to the satisfaction of the FDA. FDA approval of a BLA must be obtained before a biologic may be marketed in the United States. The submission of a BLA requires payment of a substantial application user fee to the FDA, unless a waiver or exemption applies.

Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the FDA accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. Once a BLA has been accepted for filing, the FDA's goal is to review standard applications within ten months after the filing date, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process may also be extended by FDA requests for additional information or clarification. The FDA reviews a BLA to determine, among other things, whether a product is safe, pure and potent and the facility in which it is manufactured, processed, packed or held meets standards designed to assure the product's continued safety, purity and potency. The FDA may also convene an advisory committee to provide clinical insight on application review questions. An advisory committee is a panel of

independent experts, including clinicians and other scientific experts, which reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving a BLA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP and adequate to assure consistent production of the product within required specifications. Additionally, before approving a BLA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP.

If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. After the FDA evaluates a BLA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter or a Complete Response Letter, or CRL. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A CRL will describe all of the deficiencies that the FDA has identified in the BLA, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the CRL without first conducting required inspections, testing submitted product lots, and/or reviewing proposed labeling. In issuing the CRL, the FDA may recommend actions that the applicant might take to place the BLA in condition for approval, including requests for additional information or clarification. The FDA may delay or refuse approval of a BLA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the BLA with a Risk Evaluation and Mitigation Strategy, or REMS, to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy implemented to manage a known or potential serious risk associated with a product and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing requirements is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product’s safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

The FDA offers a number of expedited development and review programs for qualifying product candidates. These programs include fast track designation, breakthrough therapy designation, priority review, and accelerated approval.

The fast track program is intended to expedite or facilitate the process for reviewing new products that are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a fast track product has opportunities for more frequent interactions with the applicable FDA review team during product development and, once a BLA is submitted, the product candidate may be eligible for priority review. A fast track product may

also be eligible for rolling review, where the FDA may consider for review sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA.

A product candidate intended to treat a serious or life-threatening disease or condition may also be eligible for breakthrough therapy designation to expedite its development and review. A product candidate can receive breakthrough therapy designation if preliminary clinical evidence indicates that the product candidate, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the fast track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product candidate, including involvement of senior managers and experienced review staff in a cross-disciplinary review, where appropriate.

Any marketing application for a drug or biologic submitted to the FDA for approval, including a product candidate with a fast track designation and/or breakthrough therapy designation, may be eligible for other types of FDA programs intended to expedite the FDA review and approval process, such as priority review and accelerated approval. A product candidate is eligible for priority review if it is designed to treat a serious or life-threatening disease or condition, and if approved, would provide a significant improvement in safety or effectiveness compared to available alternatives for such disease or condition. For original BLAs, priority review designation means the FDA’s goal is to take action on the marketing application within six months of the 60-day filing date (as compared to ten months under standard review).

Additionally, product candidates studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. Products receiving accelerated approval may be subject to expedited withdrawal procedures if the sponsor fails to conduct the required post-marketing studies or if such studies fail to verify the predicted clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Fast track designation, breakthrough therapy designation, and priority review, accelerated approval do not change the standards for approval but may expedite the development or approval process. Even if a product candidate qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 individuals in the United States and when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested before submitting a BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the BLA application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or, as noted above, if a second applicant demonstrates that its product is clinically superior to the approved product with orphan exclusivity or the manufacturer of the approved product is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Post-approval Requirements

Biologics are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and complying with advertising and promotion requirements, which include restrictions on promoting products for unapproved uses or patient populations (known as “off-label use”) and limitations on industry-sponsored scientific and educational activities. Although physicians may prescribe approved products for off-label uses, manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, including not only by Company employees but also by agents of the Company or those speaking on the Company’s behalf, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. Promotional materials for approved biologics must be submitted to the FDA in conjunction with their first use or first publication.

After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual program fees for any marketed products. Biologic manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP, which impose certain procedural and documentation requirements up. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance.

The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical studies to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;

- safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- fines, warning letters, or untitled letters;
- clinical holds on clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products;
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs;
- mandated modification of promotional materials and labeling and the issuance of corrective information; and
- and the imposition of civil or criminal penalties.

United States Biosimilars and Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, signed into law in 2010, includes a subtitle called the Biologics Price Competition and Innovation Act, or BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars in the United States. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, a reference biological product is granted 12 years of data exclusivity from the time of first licensure of the product, and an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that applicant's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed "interchangeable" by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, government proposals have sought to reduce the 12-year reference product exclusivity period. Other aspects of the Patient Protection and Affordable Care Act, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate impact, implementation, and regulatory interpretation of the BPCIA remain subject to significant uncertainty.

Other Healthcare Laws

Pharmaceutical companies are subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which they conduct their business and may constrain the financial arrangements and relationships through which we research, as well as, sell, market and distribute any products for which we obtain marketing approval. Such laws include, without limitation, federal and state anti-kickback, fraud and abuse, false claims, data privacy and security and physician and other health care provider transparency laws and regulations. If our significant operations are found to be in violation of any of such laws or any other governmental regulations that apply, they may be subject to penalties, including, without limitation, significant administrative, civil and criminal penalties, damages, fines, disgorgement, the curtailment or restructuring of operations, integrity oversight and reporting obligations, exclusion from participation in federal and state healthcare programs and imprisonment.

Coverage and Reimbursement

Sales of any product depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state, and foreign government healthcare programs, commercial insurance and managed healthcare organizations, and the level of reimbursement for such product by third-party payors. Decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. These third-party payors are increasingly reducing reimbursements for medical products, drugs and services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product. Decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product and also have a material adverse effect on sales.

Healthcare Reform

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, each as amended, collectively known as the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. The ACA contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement adjustments and changes to fraud and abuse laws. For example, the ACA:

- increased the minimum level of Medicaid rebates payable by manufacturers of brand name drugs from 15.1% to 23.1% of the average manufacturer price;
- required collection of rebates for drugs paid by Medicaid managed care organizations;
- required manufacturers to participate in a coverage gap discount program, under which they must agree to offer 70 percent point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D; and
- imposed a non-deductible annual fee on pharmaceutical manufacturers or importers who sell “branded prescription drugs” to specified federal government programs.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example,

on March 2, 2020 the United States Supreme Court granted the petitions for writs of certiorari to review the U.S. Court of Appeals for the 5th Circuit ruling that the individual mandate was unconstitutional and to determine the constitutionality of the ACA in its entirety. It is uncertain when the Supreme Court will rule on this case. Other legislative changes have been proposed and adopted since the ACA was enacted, including aggregate reductions of Medicare payments to providers of 2% per year, which was temporarily suspended from May 1, 2020 through March 31, 2021 due to the COVID-19 pandemic, and reduced payments to several types of Medicare providers. Legislation is currently pending in Congress that would further extend the suspension through December 31, 2021. Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries, proposed and enacted legislation and executive orders issued by the prior presidential administration designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. It is also possible that additional governmental action is taken in response to the COVID-19 pandemic. Individual states in the United States have also become increasingly active in implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Employees and Human Capital Resources

Our human capital objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and new employees, advisors and consultants. The principal purposes of our equity incentive plans are to attract, retain and reward personnel through the granting of stock-based compensation awards.

As of March 31, 2021, we had seven employees, including five in research and development and two in general and administrative functions. We also utilize eight consultants, six in various roles related to research and development and two in general and administrative functions. We believe our employee relations are good.

Legal Proceedings

We are not currently subject to any material legal proceedings.

Facilities

Our corporate headquarters are currently located in Charlottesville, Virginia, where we lease 950 square feet of office space pursuant to a lease agreement that expires in August 2021. We also lease 8,573 square feet of office space in Carmel, IN pursuant to a lease agreement that expires in August 2023. We believe that these facilities will be adequate for our near-term needs. If required, we believe that suitable additional or alternative space would be available in the future on commercially reasonable terms.

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MANAGEMENT

Executive Officers and Directors

The following table provides information regarding our current executive officers and directors, including their ages as of March 31, 2021:

Name	Age	Position(s)
Executive Officers		
Daniel O'Connell.	51	President and Chief Executive Officer and Director
Eric Siemers, M.D.	66	Chief Medical Officer
Russell Barton, M.S.	63	Chief Operating Officer
Non-Employee Directors		
Jeffrey L. Ives	69	Director
Jeffrey Sevigny, M.D.	52	Director
Sean Stalfort	51	Director
Laura Stoppel, Ph.D.	35	Director
Stephen Zachary, Ph.D.	38	Director

(1) Member of the audit committee.
(2) Member of the compensation committee.
(3) Member of the nominating and corporate governance committee.

Executive Officers

Daniel O'Connell Mr. O'Connell has served as our President and Chief Executive since December 2014. Mr. O'Connell previously co-founded and served as CEO of Functional NeuroModulation Ltd., or FNM, a clinical-stage company developing deep brain stimulation therapies for Alzheimer's disease. Mr. O'Connell is a founding member and former managing partner of NeuroVentures Capital, LLC, a firm he helped to invest in emerging neurosciences companies. He earned a BA from Brown University and MBA from the University of Virginia. Our board of directors believes Mr. O'Connell is qualified to serve as a director based on his experience in venture capital and in the neurosciences.

Eric Siemers, M.D. Dr. Siemers has served as our Chief Medical Officer since June 2018, prior to which, in April 2018, he began consulting for us. Prior to joining us, from November 1998 to December 2017, he served in various roles for Eli Lilly and Company, including most recently as Distinguished Medical Fellow, from October 2014 to December 2017, and was responsible for several clinical trials for Alzheimer's disease compounds, including five Phase 3 studies as well as Phase 1 and 2 studies. Prior to Eli Lilly, Dr. Siemers founded the Indiana University Movement Disorder Clinic, where his research included Parkinson's and Huntington's disease. Dr. Siemers served on the NIA/Alzheimer's Association working group that proposed new research nomenclature for Alzheimer's disease utilizing biomarkers and clinical symptoms. He was a founding member of the Alzheimer's Association Research Roundtable and is on the steering committee for the Alzheimer's Disease Neuroimaging Initiative. Dr. Siemers earned his M.D. from the Indiana University School of Medicine with Highest Distinction.

Russell Barton, MS Mr. Barton has served as our Chief Operating Officer since April 2019. Mr. Barton also serves as Director of Clinical Operations at AgeneBio, a role he has held since October 2018. From 1979 to 2017, he served in various roles for Eli Lilly and Company, including as COO of the company's Global Alzheimer's Disease Platform Team for 10 years from 2007 to 2017. Mr. Barton was an active participant in the design and startup of the Global Alzheimer's Platform, which was developed through a collaboration between the Global CEO initiative on Alzheimer's disease and the New York Academy of Sciences. Mr. Barton received a BS in chemistry from Illinois State University and an MS in chemistry from Purdue University.

Non-Employee Directors

Jeffrey L. Ives Dr. Ives has served as a member of our board of directors since May 2014. Dr. Ives has served as a director on the board of Cara Therapeutics since 2014. He currently also serves on the boards of several neurodegenerative disease companies including Pinteon Therapeutics, Orthogonal Neuroscience, and Astrocyte Pharmaceuticals. From 2008 until 2013, Dr. Ives served as the Chief Executive Officer of Satori Pharmaceuticals, Inc., a company focused on Alzheimer’s disease. Prior to Satori, he served as senior vice president at Pfizer, leading the neurodegenerative diseases, psychiatry and pain research areas. Dr. Ives received his doctorate and master’s degrees from Yale University and received his BA from Colgate University. Our board of directors believes Dr. Ives is qualified to serve as a director based on experience in neurodegenerative diseases, particularly AD.

Jeffrey Sevigny, M.D. Dr. Sevigny has served as a member of our board of directors since July 2019. Dr. Sevigny is the Chief Medical Officer of Prevail Therapeutics, where he has served in such capacity since March 2018. Prior to his tenure at Prevail, he served as Vice President and Global Head of Translational Medicine Neuroscience at Roche from January 2016 to March 2018. Prior to Roche, he was Senior Director of Clinical Development at Biogen Inc., a multinational biotechnology company, from September 2010 to January 2016. Previously, he served as Principal Medical Scientific Expert of Neuroscience at Novartis AG, a multinational pharmaceutical company, and as Associate Director of Neuroscience at Merck. Dr. Sevigny has also held academic appointments as Assistant Professor of Neurology at Albert Einstein School of Medicine and Assistant Professor of Clinical Neurology at Columbia University College of Physicians and Surgeons. Dr. Sevigny received an M.D. from Tufts University School of Medicine and an A.B. in biochemistry from Bowdoin College. He completed a neurology residency at the Neurological Institute of New York at Columbia University Medical Center and a fellowship in Aging & Dementia and Neuro Epidemiology at Sergievsky Center at Columbia University and Columbia University Mailman School of Public Health. Our board of directors believes Dr. Sevigny is qualified to serve as a director based on his over 15 years of experience in neurology, and specifically neurodegenerative disorders.

Sean Stalfort Mr. Stalfort has served as a member of our board of directors since October 2018. Mr. Stalfort is President of PBM Capital Group, LLC, a private equity and venture capital investment firm in the business of investing in healthcare and life-science related companies, and has worked at PBM Capital since 2010. Mr. Stalfort is a director of Verrica Pharmaceuticals, Inc., a biopharmaceutical company, and he previously served as a director of Dova Pharmaceuticals, Inc., a biopharmaceutical company. Prior to joining PBM Capital, he was the executive vice president for new business development/M&A for PBM Products. Mr. Stalfort is also a founding partner of Octagon Partners and Octagon Finance, historic tax credit real estate companies. Mr. Stalfort received a B.A. in business economics and political science from Brown University. Our board of directors believes Mr. Stalfort is qualified to serve as a director based on his experience in venture capital, particularly related to healthcare.

Laura Stoppel, PhD Dr. Stoppel has served as a member of our board of directors since November 2020. Dr. Stoppel currently serves as a Principal on the Investment Team at RA Capital Management and has previously served in various roles at RA Capital since 2016. Dr. Stoppel serves on the board of directors for Artiva Biotherapeutics and Nimbus Therapeutics. Dr. Stoppel holds a BA in Biology and Psychology from Harvard University, and a PhD in Neuroscience from MIT. Our board of directors believes Dr. Stoppel is qualified to serve as a director based on her experience in venture capital and the neurosciences.

Stephen Zachary, PhD Dr. Zachary has served as a member of our board since October 2018. Dr. Zachary has served as a Partner and Portfolio Manager at Sands Capital since 2016 and serves on the boards of directors of DiCE Molecules, Selux Diagnostics, and Day Zero Diagnostics. Dr. Zachary received his PhD in Neuroscience from Johns Hopkins School of Medicine, and received a B.A. in Philosophy from Washington & Lee University. He is a member of the Kauffman Fellowship (Class 23). Our board of directors believes Dr. Zachary is qualified to serve as a director based on his experience in venture capital and the neurosciences.

Board Composition

Our business and affairs are managed under the direction of our board of directors, which currently consists of six members. Our directors were elected to, and currently serve on, the board pursuant to a voting agreement among us and certain of our stockholders and voting rights granted by our current amended and restated certificate of incorporation. The voting agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors.

In accordance with our amended and restated certificate of incorporation that will be in effect upon the closing of this offering, our board of directors will be divided into three classes, each of which will consist, as nearly as possible, of one-third of the total number of directors constituting our entire board and which will serve staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- Class I, which will consist of and , and their terms will expire at our first annual meeting of stockholders to be held after the closing of this offering;
- Class II, which will consist of and , and their terms will expire at our second annual meeting of stockholders to be held after the closing of this offering; and
- Class III, which will consist of and , and their terms will expire at our third annual meeting of stockholders to be held after the closing of this offering.

Our amended and restated bylaws, which will become effective upon the closing of this offering, will provide that the authorized number of directors may be changed only by resolution approved by a majority of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change of control.

Director Independence

Applicable Nasdaq rules, or the Nasdaq Listing Rules, require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq Listing Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act of 1934, as amended, or the Exchange Act. The Nasdaq independence definition includes a series of objective tests, such as that the director is not, and has not been for at least three years, one of our employees, and that neither the director nor any of his or her family members has engaged in various types of business dealings with us. In addition, under applicable Nasdaq rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Our board of directors has determined that all of our directors other than , representing of our directors, are "independent directors" as defined under applicable Nasdaq rules. In making such determination, our board of directors considered the current and prior relationships that each such director has with our company and all other facts and circumstances that our board of directors deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each director and the transactions described in the section titled "Certain Relationships and Related Party Transactions."

There are no family relationships among any of our directors or executive officers.

Role of the Board in Risk Oversight

One of the key functions of our board of directors is informed oversight of our risk management process. Our board of directors does not have a standing risk management committee, but rather administers this oversight function directly through the board of directors as a whole, as well as through various standing committees of our board of directors that address risks inherent in their respective areas of oversight. In particular, our board of directors is responsible for monitoring and assessing strategic risk exposure. Following the completion of this offering, we intend for our audit committee to have the responsibility to consider and discuss our major financial risk exposures and the steps our management has taken to monitor and control these exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. The audit committee will also monitor compliance with legal and regulatory requirements.

Board Committees

Our board of directors has established an audit committee, compensation committee and a nominating and corporate governance committee, each of which operate pursuant to a committee charter. Our board of directors may establish other committees to facilitate the management of our business. The composition and functions of each committee are described below.

Audit Committee

Upon the completion of this offering, our audit committee will consist of , and , with serving as chair of the audit committee. Our board of directors has determined that each of these individuals meets the independence requirements of Rule 10A-3 under the Securities Exchange Act of 1934, or the Exchange Act, and the applicable listing standards of Nasdaq. Each member of our audit committee can read and understand fundamental financial statements in accordance with Nasdaq audit committee requirements. Our board of directors has also determined that qualifies as an audit committee financial expert within the meaning of SEC regulations and meets the financial sophistication requirements of the Nasdaq Listing Rules. In arriving at these determinations, the board has examined each audit committee member’s scope of experience and the nature of their prior and/or current employment.

The functions of this committee include, among other things:

- helping our board of directors oversee our corporate accounting and financial reporting processes;
- managing the selection, engagement, qualifications, independence and performance of a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing related person transactions;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually that describes our internal quality control procedures, any material issues with such procedures and any steps taken to deal with such issues when required by applicable law; and

- approving or, as permitted, pre-approving, audit and permissible non-audit services to be performed by the independent registered public accounting firm.

We believe that the composition and functioning of our audit committee will comply with all applicable SEC and Nasdaq rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Compensation Committee

Upon the completion of this offering, our compensation committee will consist of , and , with serving as chair of the compensation committee. Each of these individuals is a non-employee director, as defined in Rule 16b-3 promulgated under the Exchange Act. Our board of directors has determined that each of these individuals is ‘‘independent’’ as defined under the applicable listing standards of Nasdaq, including the standards specific to members of a compensation committee. The functions of this committee include, among other things:

- reviewing, modifying and approving (or if it deems appropriate, making recommendations to the full board of directors regarding) our overall compensation strategy and policies;

- making recommendations to the full board of directors regarding the compensation and other terms of employment of our executive officers;

- reviewing and making recommendations to the full board of directors regarding performance goals and objectives relevant to the compensation of our executive officers and assessing their performance against these goals and objectives;

- reviewing and approving (or if it deems it appropriate, making recommendations to the full board of directors regarding) the equity incentive plans, compensation plans and similar programs advisable for us, as well as modifying, amending or terminating existing plans and programs;

- evaluating risks associated with our compensation policies and practices and assessing whether risks arising from our compensation policies and practices for our employees are reasonably likely to have a material adverse effect on us;

- reviewing and making recommendations to the full board of directors regarding the type and amount of compensation to be paid or awarded to our non-employee board members;

- establishing policies with respect to votes by our stockholders to approve executive compensation to the extent required by Section 14A of the Exchange Act and, if applicable, determining our recommendations regarding the frequency of advisory votes on executive compensation;

- reviewing and assessing the independence of compensation consultants, legal counsel and other advisors as required by Section 10C of the Exchange Act;

- administering our equity incentive plans;

- establishing policies with respect to equity compensation arrangements;

- reviewing the competitiveness of our executive compensation programs and evaluating the effectiveness of our compensation policy and strategy in achieving expected benefits to us;

- reviewing and making recommendations to the full board of directors regarding the terms of any employment agreements, severance arrangements, change in control protections and any other compensatory arrangements for our executive officers;

- reviewing with management and approving our disclosures under the caption "Compensation Discussion and Analysis" in our periodic reports or proxy statements to be filed with the SEC, to the extent such caption is included in any such report or proxy statement;

- preparing the report that the SEC requires in our annual proxy statement; and

- reviewing and evaluating on an annual basis the performance of the compensation committee and the compensation committee charter.

We believe that the composition and functioning of our compensation committee will comply with all applicable SEC and Nasdaq rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Nominating and Corporate Governance Committee

Upon the completion of this offering, our nominating and corporate governance committee will consist of , and , with serving as chair of the nominating and corporate governance committee. Our board of directors has determined that each of these individuals is ‘‘independent’’ as defined under the applicable listing standards of Nasdaq and SEC rules and regulations. The functions of this committee include, among other things:

- identifying, reviewing and evaluating candidates to serve on our board of directors;

- determining the minimum qualifications for service on our board of directors;

- evaluating director performance on the board and applicable committees of the board and determining whether continued service on our board is appropriate;

- evaluating, nominating and recommending individuals for membership on our board of directors;

- evaluating nominations by stockholders of candidates for election to our board of directors;

- considering and assessing the independence of members of our board of directors;

- developing a set of corporate governance policies and principles and recommending to our board of directors any changes to such policies and principles;

- reviewing and making recommendations to the board of directors with respect to management succession planning;

- considering questions of possible conflicts of interest of directors as such questions arise; and

- reviewing and evaluating on an annual basis the performance of the nominating and corporate governance committee and the nominating and corporate governance committee charter.

We believe that the composition and functioning of our nominating and corporate governance committee will comply with all applicable SEC and Nasdaq rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Code of Business Conduct and Ethics

Effective upon the closing of this offering, we will adopt a Code of Business Conduct and Ethics, or the Code of Conduct, applicable to all of our employees, executive officers and directors. This includes our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. Following the closing of this offering, the full text of the Code of Conduct will be available on our website at http://www.acumenpharm.com/. We intend to post on our website all disclosures that are required by law or the Nasdaq Listing Rules concerning any amendments to, or waivers from, any provision of the Code of Conduct. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

Non-Employee Director Compensation

We do not currently have a formal director compensation policy. We intend to adopt a non-employee director compensation policy, pursuant to which our non-employee directors will be eligible to receive compensation for service on our board of directors and committees of our board of directors, to be effective following the completion of this offering.

During the year ended December 31, 2020, we paid to each of Drs. Ives, Sevigny and Krafft, each a non-employee director, an annual cash retainer of $42,000 for serving on our board of directors.

Dr. Jeffrey Sevigny, a current member of our board of directors, provided advisory services to our company during 2020 pursuant to an Advisory Board Consulting Agreement with us dated February 20, 2019. During the year ended December 31, 2020, we did not pay fees to Dr. Sevigny for his advisory services.

Dr. Grant Krafft, who resigned from our board of directors in November 2020, provided consulting services to our company during 2020 pursuant to a Consulting Agreement with us dated February 27, 2019 and pursuant to an Amended and Restated Consulting Agreement with us dated December 1, 2020. During the year ended December 31, 2020, we paid Dr. Krafft $30,000 for his consulting services.

2020 Director Compensation Table

The following table sets forth information regarding the compensation earned for service on our board of directors in 2020 by our non-employee directors. Daniel O’Connell, our Chief Executive Officer, is also a member of our board of directors but did not receive any additional compensation for service as a director.

Name (3)	Fees Earned or Paid in Cash ($)	Total ($)
Jeffrey L. Ives	42,000	42,000
Jeffrey Sevigny, M.D.	42,000	42,000
Sean Stalfort	—	—
Laura Stoppel, PhD	—	—
Stephen Zachary, PhD	—	—
Grant Krafft, PhD(1)	42,000	42,000
Joseph Andrasko(2)	—	—

(1) Dr. Krafft resigned from our board of directors in November 2020.
(2) Mr. Andrasko resigned from our board of directors in November 2020.

(3) No stock options were granted to our non-employee directors during 2020. The table below shows the aggregate number of option awards outstanding for each of our non-employee directors as of December 31, 2020:

Name	Number of Outstanding Options
Jeffrey L. Ives	69,999
Jeffrey Sevigny, M.D.	72,499
Sean Stalfort	—
Laura Stoppel, PhD	—
Stephen Zachary, PhD	—

EXECUTIVE COMPENSATION

This section describes the material elements of compensation awarded to, earned by or paid to each of our named executive officers in 2020. We are an "emerging growth company," within the meaning of the Jumpstart Our Business Startups Act of 2012, as amended, or JOBS Act, and have elected to comply with the reduced compensation disclosure requirements available to emerging growth companies under the JOBS Act. Our named executive officers for 2020 were Daniel O'Connell, Eric Siemers, M.D. and Russell Barton, M.S. This section also provides qualitative information regarding the manner and context in which compensation is awarded to and earned by our named executive officers and is intended to place in perspective the data presented in the tables and narrative that follow.

Summary Compensation Table

The following table sets forth information regarding compensation awarded to, earned by and paid to our named executive officers with respect to the year ended December 31, 2020.

Name and Principal Position	Salary ($)(1)	Bonus ($)(2)	Total ($)
Daniel O'Connell (3)			
President and Chief Executive Officer	240,000	96,000	336,000
Eric Siemers, M.D.			
Chief Medical Officer	180,000	57,600	237,600
Russell Barton, MS			
Chief Operating Officer	168,000	55,680	223,680

(1) Each of our named executive officers served as a consultant to the company prior to January 1, 2021. Amounts included in the "Salary" column represent consulting fees paid to each named executive officer for services rendered to us during 2020.
(2) This column reflects annual discretionary bonuses received in respect of 2020 services.
(3) Mr. O'Connell is also a member of our Board, but he did not receive any additional compensation in his capacity as a director in 2020.

Outstanding Equity Awards at December 31, 2020

The following table presents information regarding outstanding equity awards held by our named executive officers as of December 31, 2020. All awards were granted pursuant to the Prior Plan. See "—Equity Incentive Plans—Prior Plan" below for additional information.

		Option Awards(1)				
Name	Grant Date	Number of Securities Underlying Unexercised Options(#) Exercisable	Number of Securities Underlying Unexercised Options(#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options(#)	Option Exercise Price($)	Option Expiration Date
Daniel O'Connell	12/1/2011	1,666	—	—	$ 3.00	12/1/2021
	5/14/2013	296	—	—	$ 15.03	5/14/2023
	12/17/2014	50,016	—	—	$ 3.00	12/17/2024
	4/27/2017	18,666	—	—	$ 3.00	4/27/2027
	3/1/2019	450,787	450,787(2)	—	$ 0.48	3/1/2029
Eric Siemers	3/1/2019	201,018	201,018(2)	—	$ 0.48	3/1/2029
Russell Barton	3/1/2019	49,953	49,953(2)	—	$ 0.48	3/1/2029

(1) All option awards listed in this table were granted pursuant to our Prior Plan, the terms of which are described below under "—Equity Incentive Plans—Prior Plan".
(2) The shares underlying this option vest in equal monthly installments over a period of 36 months from the date of grant, subject to the named executive officer's continuous service through each vesting date.

Employment Arrangements

Agreements with our Named Executive Officers and Potential Payments upon Termination of Employment

We have entered into employment agreements with each of our named executive officers. The agreements generally provide for employment without any specific term and set forth the named executive officer's base salary, bonus potential, eligibility for employee benefits and severance benefits upon a qualifying termination of employment, subject to certain confidentiality, non-solicitation and non-competition provisions. Any potential payments and benefits due upon a qualifying termination of employment or a change in control are further described below.

Daniel O'Connell

Executive Employment Agreement

On January 1, 2021, we entered into an executive employment agreement with Mr. O'Connell, pursuant to which Mr. O'Connell serves as our President and Chief Executive Officer and as an employee at-will. Under his executive employment agreement, Mr. O'Connell is entitled to an annual base salary of $512,000, which base salary will be reviewed and may be adjusted by the board of directors on an annual basis. Additionally, Mr. O'Connell is eligible to receive an annual performance bonus with a target equal to 50% of his then-current base salary, contingent upon satisfaction of individual and company performance goals. In 2020, we paid Mr. O'Connell an annual performance bonus of $96,000 based upon the achievement of 2020 individual and company performance milestones as determined by our board of directors. As contemplated by his executive employment agreement, on January 4, 2021, we granted to Mr. O'Connell an option to purchase 1,767,656 shares of our common stock pursuant to our Prior Plan at an exercise price of $0.80 per share, which grant will vest as to 25% of the shares on the one-year anniversary of the grant, with the remainder vesting monthly over the following 36 months, subject to Mr. O'Connell's continuous service through such vesting dates.

Under Mr. O'Connell's executive employment agreement, if he resigns for "good reason" or we terminate Mr. O'Connell's employment without "cause" not in connection with a change in control (as defined in the executive employment agreement, and excluding a termination on account of Mr. O'Connell's death or disability), Mr. O'Connell shall be eligible to receive the following severance benefits:

- an amount equal to 12 months of his annual base salary; and
- payment for health premiums until the earlier of (i) 12 months; (ii) the date he becomes eligible for substantially equivalent health benefits; or (iii) the date he ceases to be eligible for COBRA continuation coverage at the level existing on the termination date.

As a condition to receiving the foregoing severance benefits, Mr. O'Connell must sign and not revoke a general release contained in a separation agreement in the form presented by us, return all company property and confidential information in his possession, comply with his post-termination obligations, and resign from any positions held with us.

Amended and Restated Consulting Agreement

On October 1, 2018, we entered into an amended and restated consulting agreement with Fastnet BioVentures, LLC, pursuant to which Mr. O'Connell, as sole member of Fastnet BioVentures, LLC, agreed to

serve as our President and Chief Executive Officer. Pursuant to the amended and restated consulting agreement, Mr. O'Connell was responsible for leading the planning, development and execution of our growth and development efforts, as described in the agreement. The amended and restated consulting agreement had a term continuing through December 31, 2021 and was terminated early in accordance with its terms upon execution of Mr. O'Connell's executive employment agreement in January 2021. Under the amended and restated consulting agreement, Mr. O'Connell was entitled to receive compensation including a fee of $20,000 per month.

Eric Siemers

Executive Employment Agreement

On January 1, 2021, we entered into an executive employment agreement with Dr. Siemers, pursuant to which Dr. Siemers serves as our Chief Medical Officer and as an employee at-will. Under his executive employment agreement, Dr. Siemers is entitled to an annual base salary of $332,000, which base salary will be reviewed and may be adjusted by the board of directors on an annual basis. Additionally, Dr. Siemers is eligible to receive an annual performance bonus with a target equal to 40% of his then-current base salary, contingent upon satisfaction of individual and company performance goals. In 2020, we paid Dr. Siemers an annual performance bonus of $57,600 based upon the achievement of 2020 individual and company performance milestones as determined by our board of directors. As contemplated by his executive employment agreement, on January 4, 2021, we granted to Dr. Siemers an option to purchase 463,374 shares of our common stock pursuant to our Prior Plan at an exercise price of $0.80 per share, which grant will vest as to 25% of the shares on the one-year anniversary of the grant, with the remainder vesting monthly over the following 36 months, subject to Dr. Siemers' continuous service through such vesting dates.

Under Dr. Siemers' executive employment agreement, if he resigns for "good reason" or we terminate Dr. Siemers' employment without "cause" not in connection with a change in control (as defined in the executive employment agreement, and excluding a termination on account of Dr. Siemers' death or disability), Dr. Siemers' shall be eligible to receive the following severance benefits:

- an amount equal to six months of his annual base salary; and
- payment for health premiums until the earlier of (i) 12 months; (ii) the date he becomes eligible for substantially equivalent health benefits; or (iii) the date he ceases to be eligible for COBRA continuation coverage at the level existing on the termination date.

As a condition to receiving the foregoing severance benefits, Dr. Siemers must sign and not revoke a general release contained in a separation agreement in the form presented by us, return all company property and confidential information in his possession, comply with his post-termination obligations, and resign from any positions held with us.

Amended and Restated Consulting Agreement

On June 1, 2019, we entered into an amended and restated consulting agreement with Siemers Integration LLC, pursuant to which Dr. Siemers, as President of Siemers Integration LLC, agreed to serve as our lead clinical development consultant with the title of Chief Medical Officer and to provide additional consulting services as described in the amended and restated consulting agreement. The amended and restated consulting agreement had a term of 36 months and was terminated early in accordance with its terms upon execution of Dr. Siemers' executive employment agreement in January 2021. Under the amended and restated consulting agreement, Dr. Siemers was entitled to receive compensation including a fee of $15,000 per month and an option to purchase 8,350,000 shares of our common stock.

Russell Barton

Executive Employment Agreement

On January 1, 2021, we entered into an executive employment agreement with Mr. Barton, pursuant to which Mr. Barton serves as our Chief Operating Officer and as an employee at-will. Under his executive employment agreement, Mr. Barton is entitled to an annual base salary of $260,000, which base salary will be reviewed and may be adjusted by the board of directors on an annual basis. Additionally, Mr. Barton is eligible to receive an annual performance bonus with a target equal to 40% of his then-current base salary, contingent upon satisfaction of individual and company performance goals. In 2020, we paid Mr. Barton an annual performance bonus of $55,680 based upon the achievement of 2020 individual and company performance milestones as determined by our board of directors. As contemplated by his executive employment agreement, on January 4, 2021, we granted at an exercise price of $0.80 per share to Mr. Barton an option to purchase 425,305 shares of our common stock in pursuant to our Prior Plan, which grant will vest as to 25% of the shares on the one-year anniversary of the grant, with the remainder vesting monthly over the following 36 months, subject to Mr. Barton's continuous service through such vesting dates.

Under Mr. Barton's executive employment agreement, if he resigns for "good reason" or we terminate Mr. Barton's employment without "cause" not in connection with a change in control (as defined in the executive employment agreement, and excluding a termination on account of Mr. Barton's death or disability), Mr. Barton shall be eligible to receive the following severance benefits:

- an amount equal to six months of his annual base salary; and
- payment for health premiums until the earlier of (i) 12 months; (ii) the date he becomes eligible for substantially equivalent health benefits; or (iii) the date he ceases to be eligible for COBRA continuation coverage at the level existing on the termination date.

As a condition to receiving the foregoing severance benefits, Mr. Barton must sign and not revoke a general release contained in a separation agreement in the form presented by us, return all company property and confidential information in his possession, comply with his post-termination obligations, and resign from any positions held with us.

Amended and Restated Consulting Agreement

On April 1, 2019, we entered into an amended and restated consulting agreement with Pharmasagacity Consulting, LLC, pursuant to which Mr. Barton, as President of Pharmasagacity Consulting, LLC, agreed to serve as our IND Team Leader and Head of Clinical Operations to provide project management services as described in the amended and restated consulting agreement. The amended and restated consulting agreement had a term of 24 months and was terminated early in accordance with its terms upon execution of Mr. Barton's executive employment agreement in January 2021. Under the amended and restated consulting agreement, Mr. Barton was entitled to receive compensation including a fee of $14,000 per month and an option to purchase 2,075,000 shares of our common stock.

Equity Incentive Plans

2021 Equity Incentive Plan

Our board of directors adopted our 2021 Plan in 2021 and our stockholders approved our 2021 Plan in 2021. Our 2021 Plan provides for the grant of incentive stock options (ISOs) to employees, including employees of any parent or subsidiary, and for the grant of nonstatutory stock options (NSOs) stock appreciation rights, restricted stock awards, restricted stock unit awards, performance awards and

other forms of stock awards to employees, directors, and consultants, including employees and consultants of our affiliates. Our 2021 Plan is a successor to and continuation of our Prior Plan, which is described below. The 2021 Plan will become effective immediately prior to and contingent upon the execution of the underwriting agreement related to this offering.

Authorized Shares. Initially, the maximum number of shares of our common stock that may be issued under our 2021 Plan after it becomes effective will not exceed shares, which is the sum of (1) new shares, plus (2) the number of shares that remain available for issuance under our Prior Plan at the time our 2021 Plan becomes effective, plus (3) any shares subject to outstanding stock options or other stock awards that were granted under our Prior Plan that, on or after the 2021 Plan becomes effective, terminate or expire prior to exercise or settlement; are settled in cash; are forfeited or repurchased because of the failure to vest; or are reacquired or withheld to satisfy a tax withholding obligation or the purchase or exercise price in accordance with the terms of the Prior Plan. In addition, the number of shares of our common stock reserved for issuance under our 2021 Plan will automatically increase on January 1 of each calendar year, starting on January 1, 2022 (assuming the 2021 Plan becomes effective in 2021) through January 1, 2031, in an amount equal to % of the total number of shares of our common stock outstanding on December 31 of the fiscal year before the date of each automatic increase, or a lesser number of shares determined by our board of directors prior to the applicable January 1. The maximum number of shares of our common stock that may be issued upon the exercise of incentive stock options under our 2021 Plan is .

Shares subject to stock awards granted under our 2021 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, do not reduce the number of shares available for issuance under our 2021 Plan. Additionally, shares become available for future grant under our 2021 Plan if they were issued under stock awards under our 2021 Plan if we repurchase them or they are forfeited. This includes shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award.

Plan Administration. Our board of directors, or a duly authorized committee of our board of directors, will administer our 2021 Plan. Our board of directors has delegated concurrent authority to administer our 2021 Plan to the compensation committee. We refer to the board of directors, or the applicable committee with the power to administer our 2021 Plan, as the plan administrator. Our plan administrator may also delegate to one or more of our officers the authority to (1) designate employees (other than officers) to receive specified stock awards and (2) determine the number of shares subject to such stock awards. Under our 2021 Plan, our board of directors has the authority to determine award recipients, grant dates, the numbers and types of stock awards to be granted, the applicable fair market value, and the provisions of each stock award, including the period of exercisability and the vesting schedule applicable to a stock award. The plan administrator has the power to modify outstanding awards under our 2021 Plan. Subject to the terms of our 2021 Plan, the plan administrator has the authority to reprice any outstanding stock award, cancel and re-grant any outstanding stock award in exchange for new stock awards, cash or other consideration, or take any other action that is treated as a repricing under generally accepted accounting principles, with the consent of any adversely affected participant.

Stock Options. ISOs and NSOs are granted under stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for stock options, within the terms and conditions of the 2021 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2021 Plan vest at the rate specified in the stock option agreement as determined by the plan administrator.

Tax Limitations on ISOs. The aggregate fair market value, determined at the time of grant, of our common stock with respect to ISOs that are exercisable for the first time by an optionholder during any calendar year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will generally be treated as NSOs. No ISO may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our

affiliates unless (1) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant, and (2) the term of the ISO does not exceed five years from the date of grant.

Restricted Stock Unit Awards. Restricted stock units are granted under restricted stock unit award agreements adopted by the plan administrator. Restricted stock units may be granted in consideration for any form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. A restricted stock unit may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the plan administrator, or in any other form of consideration set forth in the restricted stock unit agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit. Except as otherwise provided in the applicable award agreement or other written agreement between us and the participant, restricted stock units that have not vested will be forfeited once the participant's continuous service ends for any reason.

Restricted Stock Awards. Restricted stock awards are granted under restricted stock award agreements adopted by the plan administrator. A restricted stock award may be awarded in consideration for cash, check, bank draft or money order, services to us, or any other form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. The plan administrator determines the terms and conditions of restricted stock awards, including vesting and forfeiture terms. If a participant's service relationship with us ends for any reason, we may receive any or all of the shares of common stock held by the participant that have not vested as of the date the participant terminates service with us through a forfeiture condition or a repurchase right.

Stock Appreciation Rights. Stock appreciation rights are granted under stock appreciation grant agreements adopted by the plan administrator. The plan administrator determines the purchase price or strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of our common stock on the date of grant. A stock appreciation right granted under the 2021 Plan vests at the rate specified in the stock appreciation right agreement as determined by the plan administrator.

Performance Awards. The 2021 Plan permits the grant of performance-based stock and cash awards. The plan administrator may structure awards so that the shares of our stock, cash, or other property will be issued or paid only following the achievement of certain pre-established performance goals during a designated performance period. The performance criteria that will be used to establish such performance goals may be based on any measure of performance selected by the plan administrator.

The performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise (i) in the award agreement at the time the award is granted or (ii) in such other document setting forth the performance goals at the time the goals are established, we will appropriately make adjustments in the method of calculating the attainment of performance goals as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any portion of our business which is divested achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of our common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under our bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; and (11) to exclude the goodwill and intangible asset impairment charges that are required

to be recorded under generally accepted accounting principles. In addition, we retain the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of the goals. The performance goals may differ from participant to participant and from award to award.

Other Stock Awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the stock award (or cash equivalent) and all other terms and conditions of such awards.

Non-Employee Director Compensation Limit. The aggregate value of all compensation granted or paid to any non-employee director with respect to any calendar year, including stock awards granted and cash fees paid by us to such non-employee director, will not exceed $ in total value, or in the event such non-employee director is first appointed or elected to the board during such annual period, $ in total value (in each case, calculating the value of any such stock awards based on the grant date fair value of such stock awards for financial reporting purposes).

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split, or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2021 Plan, (2) the class and maximum number of shares by which the share reserve may increase automatically each year, (3) the class and maximum number of shares that may be issued upon the exercise of incentive stock options, and (4) the class and number of shares and exercise price, strike price, or purchase price, if applicable, of all outstanding stock awards.

Corporate Transactions. The following applies to stock awards under the 2021 Plan in the event of a corporate transaction, unless otherwise provided in a participant's stock award agreement or other written agreement with us or one of our affiliates or unless otherwise expressly provided by the plan administrator at the time of grant.

In the event of a corporate transaction, any stock awards outstanding under the 2021 Plan may be assumed, continued or substituted for by any surviving or acquiring corporation (or its parent company), and any reacquisition or repurchase rights held by us with respect to the stock award may be assigned to the successor (or its parent company). If the surviving or acquiring corporation (or its parent company) does not assume, continue or substitute for such stock awards, then with respect to any such stock awards that are held by participants whose continuous service has not terminated prior to the effective time of the transaction, or current participants, the vesting (and exercisability, if applicable) of such stock awards will be accelerated in full to a date prior to the effective time of the transaction (contingent upon the effectiveness of the transaction), and such stock awards will terminate if not exercised (if applicable) at or prior to the effective time of the transaction, and any reacquisition or repurchase rights held by us with respect to such stock awards will lapse (contingent upon the effectiveness of the transaction). With respect to performance awards with multiple vesting levels depending on performance level, unless otherwise provided by an award agreement or by the administrator, the award will accelerate at 100% of target. If the surviving or acquiring corporation (or its parent company) does not assume, continue or substitute for such stock awards, then with respect to any such stock awards that are held by persons other than current participants, such awards will terminate if not exercised (if applicable) prior to the effective time of the transaction, except that any reacquisition or repurchase rights held by us with respect to such stock awards will not terminate and may continue to be exercised notwithstanding the transaction. The plan administrator is not obligated to treat all stock awards or portions of stock awards in the same manner and is not obligated to take the same actions with respect to all participants.

In the event a stock award will terminate if not exercised prior to the effective time of a corporate transaction, the plan administrator may provide, in its sole discretion, that the holder of such stock award may not exercise such stock award but instead will receive a payment equal in value to the excess (if any) of (1) the value of the property the participant would have received upon the exercise of the stock award over (2) any exercise price payable by such holder in connection with such exercise.

Under our 2021 Plan, a corporate transaction is defined to include the consummation of: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of at least 50% of our outstanding securities, (3) a merger or consolidation where we do not survive the transaction, and (4) a merger or consolidation where we do survive the transaction but the shares of our common stock outstanding before such transaction are converted or exchanged into other property by virtue of the transaction, unless otherwise provided in an award agreement or other written agreement between us and the award holder.

Change in Control. Awards granted under the 2021 Plan may be subject to acceleration of vesting and exercisability upon or after a change in control (as defined in the 2021 Plan) as may be provided in the applicable stock award agreement or in any other written agreement between us or any affiliate and the participant, but in the absence of such provision, no such acceleration will automatically occur.

Under the 2021 Plan, a change in control is defined to include (1) the acquisition by any person or company of more than 50% of the combined voting power of our then outstanding stock; (2) a consummated merger, consolidation or similar transaction in which our stockholders immediately before the transaction do not own, directly or indirectly, more than 50% of the combined voting power of the surviving entity (or the parent of the surviving entity); (3) the approval by the stockholders or the board of directors of a plan of complete dissolution or liquidation of the company, or the occurrence of a complete dissolution or liquidation of the company, except for a liquidation into a parent corporation; (4) a consummated sale, lease, exclusive license or other disposition of all or substantially all of our assets other than to an entity more than 50% of the combined voting power of which is owned by our stockholders; and (5) an unapproved change in the majority of the board of directors.

Transferability. A participant may not transfer stock awards under our 2021 Plan other than by will, the laws of descent and distribution, or as otherwise provided under our 2021 Plan.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend, or terminate our 2021 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No incentive stock options may be granted after the tenth anniversary of the date our board of directors adopted our 2021 Plan. No stock awards may be granted under our 2021 Plan while it is suspended or after it is terminated.

Amended and Restated Stock Performance Plan

The Amended and Restated Stock Performance Plan (the Prior Plan) was originally adopted by our board of directors and approved by our stockholders in April 8, 2013, and most recently amended and approved by our board of directors and our stockholders on November 20, 2020. The Prior Plan provides for the grant of ISOs, NSOs, restricted stock awards, restricted stock units, stock appreciation rights, performance share awards and other stock-based awards. Our employees, officers, directors, consultants and advisors are eligible to receive awards under the Prior Plan; however, ISOs may only be granted to our employees.

Stock Awards. As of December 31, 2020, there were 1,492,303 shares of common stock issuable upon the exercise of stock options outstanding under the Prior Plan at a weighted-average exercise price of $0.76 per share, options to purchase 9,463 shares of our common stock had been exercised and 4,688,586 shares of common stock were available for future issuance under the Prior Plan. On and after the effective date of the 2021 Plan described above, we will grant no further stock options or other awards under the Prior Plan. However, any shares of common stock subject to awards under our Prior Plan that expire, terminate, or otherwise are surrendered or canceled without being fully exercised, are forfeited or results in any common stock not being issued will become available for issuance under our 2021 Plan.

Administration. Our board of directors, or a committee appointed by our board, administers the Prior Plan and, subject to any limitations set forth in the Prior Plan, will select the recipients of awards, determine the

number of shares of common stock to be subject to such stock awards and specify the other terms and conditions, including the exercise price or purchase price and vesting schedule, applicable to such stock awards.

Share Reserve. The Prior Plan provides that a maximum of 6,227,011 shares of our common stock are authorized for issuance under the plan. Our board of directors may amend, suspend, or terminate the Prior Plan at any time.

If an award under the Prior expires or becomes unexercisable without having been exercised in full, or is surrendered pursuant to an option exchange program, the unpurchased shares which were subject thereto shall become available for future grant or sale under the Prior Plan. Shares of our common stock that have actually been issued under the Prior Plan, shall not be returned to the Prior Plan, except that if shares of restricted stock are repurchased at their original purchase price, such shares of our common stock shall become available for future grant under the Plan. Upon closing of this offering, any shares that would otherwise be returned to the Prior Plan will instead be added to the shares of common stock available for issuance under the 2021 Plan.

Options. The exercise price per share of ISOs and NSOs granted under our Prior Plan cannot be less than 100% of the fair market value per share of our common stock on the grant date. Subject to the provisions of our Prior Plan, our board of directors determines the other terms of options, including any vesting and exercisability requirements, the method of payment of the option exercise price, the option expiration date, and the period following termination of service during which options may remain exercisable.

Changes to Capital Structure. Upon the occurrence of any stock split, reverse stock split, stock dividend, combination or reclassification of shares, or any other increase or decrease in the number of issued shares of our common stock effected without receipt of consideration by us, the number of shares covered by an award, the number of shares authorized for issuance under the Prior Plan as well as the price per share of our common stock subject to an award shall be proportionately adjusted.

Change in Control. In the event of a change in control, all unvested awards shall become immediately vested unless otherwise provided in an award agreement.

Transferability. A participant generally may not transfer stock awards under the Prior Plan other than by will, the laws of descent and distribution, except as our board of directors may otherwise determine or provide in the award agreement or as otherwise provided under the Prior Plan.

Amendment and Termination. Our board of directors has the authority to amend, suspend or terminate the Prior Plan. No amendment, alteration, suspension or termination of the Prior Plan shall impair the rights of any participant, unless mutually agreed otherwise between the participant and the board in writing. Unless terminated sooner by our board of directors, the Prior Plan will automatically terminate on April 8, 2023. Our board of directors has determined not to make any further awards under the Prior Plan following the closing of this offering.

2021 Employee Stock Purchase Plan

Our board of directors adopted our 2021 Employee Stock Purchase Plan (ESPP) on   , 2021 and our stockholders approved our ESPP on   , 2021. The ESPP will become effective immediately prior to and contingent upon the execution of the underwriting agreement related to this offering. The purpose of the ESPP is to secure the services of new employees, to retain the services of existing employees, and to provide incentives for such individuals to exert maximum efforts toward our success and that of our affiliates. The ESPP includes two components. One component is designed to allow eligible U.S. employees to purchase our common stock in a manner that may qualify for favorable tax treatment under Section 423 of the Code. In addition, purchase rights may be granted under a component that does not qualify for such favorable tax treatment because of deviations necessary to permit participation by eligible employees who are foreign nationals or employed outside of the U.S. while complying with applicable foreign laws.

Share Reserve. Following this offering, the ESPP authorizes the issuance of shares of our common stock under purchase rights granted to our employees or to employees of any of our designated affiliates. The number of shares of our common stock reserved for issuance will automatically increase on January 1 of each calendar year, beginning on January 1, 2022 (assuming the ESPP becomes effective in 2021) through January 1, 2031, by the lesser of (1) % of the total number of shares of our common stock outstanding on the last day of the fiscal year before the date of the automatic increase, and (2) shares; provided that before the date of any such increase, our board of directors may determine that such increase will be less than the amount set forth in clauses (1) and (2). As of the date hereof, no shares of our common stock have been purchased under the ESPP.

Administration. Our board of directors administers the ESPP and may delegate its authority to administer the ESPP to our compensation committee. The ESPP is implemented through a series of offerings under which eligible employees are granted purchase rights to purchase shares of our common stock on specified dates during such offerings. Under the ESPP, we may specify offerings with durations of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for employees participating in the offering. An offering under the ESPP may be terminated under certain circumstances.

Payroll Deductions. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to % of their earnings (as defined in the ESPP) for the purchase of our common stock under the ESPP. Unless otherwise determined by our board of directors, common stock will be purchased for the accounts of employees participating in the ESPP at a price per share that is at least the lesser of (1) 85% of the fair market value of a share of our common stock on the first date of an offering, or (2) 85% of the fair market value of a share of our common stock on the date of purchase.

Limitations. Employees may have to satisfy one or more of the following service requirements before participating in the ESPP, as determined by our board of directors, including: (1) being customarily employed for more than 20 hours per week, (2) being customarily employed for more than five months per calendar year, or (3) continuous employment with us or one of our affiliates for a period of time (not to exceed two years). No employee may purchase shares under the ESPP at a rate in excess of $25,000 worth of our common stock based on the fair market value per share of our common stock at the beginning of an offering for each calendar year such a purchase right is outstanding. Finally, no employee will be eligible for the grant of any purchase rights under the ESPP if immediately after such rights are granted, such employee has voting power over 5% or more of our outstanding capital stock measured by vote or value under Section 424(d) of the Code.

Changes to Capital Structure. In the event that there occurs a change in our capital structure through such actions as a stock split, merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, liquidating dividend, combination of shares, exchange of shares, change in corporate structure, or similar transaction, the board of directors will make appropriate adjustments to: (1) the class(es) and maximum number of shares reserved under the ESPP, (2) the class(es) and maximum number of shares by which the share reserve may increase automatically each year, (3) the class(es) and number of shares subject to and purchase price applicable to outstanding offerings and purchase rights, and (4) the number of shares that are subject to purchase limits under ongoing offerings.

Corporate Transactions. In the event of certain significant corporate transactions, including the consummation of (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) a merger or consolidation where we do not survive the transaction, or (4) a merger or consolidation where we do survive the transaction but the shares of our common stock outstanding immediately before such transaction are converted or exchanged into other property by virtue of the transaction, any then-outstanding rights to purchase our stock under the ESPP may be assumed, continued or substituted for

by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue, or substitute for such purchase rights, then the participants' accumulated payroll contributions will be used to purchase shares of our common stock within ten business days before such corporate transaction, and such purchase rights will terminate immediately.

ESPP Amendment or Termination. Our board of directors has the authority to amend or terminate our ESPP, provided that except in certain circumstances such amendment or termination may not materially impair any outstanding purchase rights without the holder's consent. We will obtain stockholder approval of any amendment to our ESPP as required by applicable law or listing requirements.

Limitations on Liability and Indemnification Matters

Upon the closing of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws that will be in effect upon the closing of this offering will provide that we are required to indemnify our directors to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we are required to advance expenses incurred by a director in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board.

We have entered into indemnification agreements with each of our directors and expect to enter into indemnification agreements with each of our executive officers prior to the closing of this offering. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and executive officers. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further,

a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought and we are not aware of any threatened litigation that may result in claims for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted for our directors, executive officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering, subject to early termination, the sale of any shares under such plans would be prohibited by the lock-up agreement that the director or officer has entered into with the underwriters.

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CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2018 to which we have been a participant in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, executive officers or holders of more than 5% of our capital stock, or any members of their immediately family, had or will have a direct or indirect material interest, other than compensation arrangements that are described under "Management—Non-Employee Director Compensation" and "Executive Compensation."

Private Placements of Our Securities

Convertible Promissory Notes

In May 2018 we issued a convertible promissory note to James B. Murray, Jr. Revocable Trust U/A/D 8/8/1991 in the aggregate principal amount of $237,500. James B. Murray, Jr. is the trustee of the James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 and is the Manager of Praxis Technologies. Entities affiliated with James B. Murray, Jr. collectively beneficially own more than 5% of our capital stock. In conjunction with the Series A/A-1 financing round, this note along with accrued interest converted into shares of Series A-1 preferred stock and is reflected in the aggregate purchase price and the aggregate shares issued to entities affiliated with James B. Murray, Jr. in the tables below.

Series A and A-1 Convertible Preferred Stock Financing

From October 2018 to November 2019, (1) we issued an aggregate of 2,043,757 shares of our Series A convertible preferred stock upon the conversion of the aggregate principal amount and interest on certain then-outstanding promissory notes, (2) we issued an aggregate of 115,575 shares of our Series A convertible preferred stock upon the optional conversion of certain shares of then-outstanding common stock, (3) we issued and sold an aggregate of 9,600,066 shares of our Series A-1 convertible preferred stock at a purchase price of $1.50 per share for aggregate gross proceeds of $14.4 million, (4) we issued an aggregate of 183,333 shares of our Series A-1 convertible preferred stock upon the conversion of the aggregate principal amount and interest on certain then-outstanding promissory notes, and (5) we issued an aggregate of 1,448,113 shares of our Series A-1 convertible preferred stock upon the optional conversion of certain shares of then-outstanding Series A convertible preferred stock. Each share of our Series A convertible preferred stock and Series A-1 convertible preferred stock will convert into common stock upon the closing of this offering.

Name	Series A Convertible Preferred Stock Received Upon Conversion of Notes (#)	Note Principal and Interest Converted into shares of Series A Convertible Preferred Stock ($)	Series A Convertible Preferred Stock Received Upon Exchange of Shares of Common Stock (#)	Shares of Common Stock Exchanged for Shares of Series A Convertible Preferred Stock (#)
Entities Affiliated with BVF Investments, LLC (1)	239,405	359,110	—	—
NV Acumen Holdings LLC (2)	276,265	414,398	—	—
PBM Capital Investments, LLC (3)	524,274(5)	786,412	—	—
Entities Affiliated with James B. Murray, Jr. (4)	543,700(5)	815,551	37,474	37,474

(1) Represents 129,367 shares of Series A convertible preferred stock issued to Biotechnology Value Fund, L.P. upon conversion of $194,051 note principal and interest, 73,233 shares of Series A preferred stock issued to Biotechnology Value Fund II, L.P. upon conversion of $109,850 note principal and interest, and 36,805 shares of Series A preferred stock issued to Investment 10, LLC upon conversion of $55,208 note principal and interest. Biotechnology Value Fund, L.P., Biotechnology Value Fund II, L.P., and Investment 10, LLC are affiliates of BVF Investments, LLC. At the time of the Series A/A-1 convertible preferred stock financing, entities affiliated with BVF Investments, LLC collectively beneficially owned more than 5% of our capital stock.

(2) NV Acumen Holdings LLC was a special purpose vehicle organized by NeuroVentures Capital to invest in the Company. At the time of the Series A/A-1 convertible preferred stock financing, entities affiliated with NeuroVentures Fund collectively beneficially owned more than 5% of our capital stock. Daniel O'Connell, our Chief Executive Officer and a member of our board of directors, served as managing partner of NeuroVentures Capital, LLC, the general partner to NeuroVentures Fund, L.P. which has sole voting and investment power with respect to the shares held by NeuroVentures Fund, L.P.

(3) PBM Capital Investments, LLC is affiliated with PBM Capital Group, LLC. Entities affiliated with PBM Capital Group, LLC collectively beneficially own more than 5% of our capital stock. Sean Stalfort, President of PBM Capital Group, LLC, is a director of the Company.

(4) Represents (a) 539,619 shares of Series A convertible preferred stock issued to James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 consisting of (i) 525,378 shares of Series A convertible preferred stock issued upon conversion of $788,067 note principal and interest, and (ii) 14,241 shares of Series A convertible preferred stock issued in exchange for 14,241 shares of common stock; and (b) 41,555 shares of Series A convertible preferred stock issued to Praxis Technologies L.P. consisting of (i) 18,322 shares of Series A convertible preferred stock issued upon conversion of $27,484 note principal and interest, and (ii) 23,233 shares of Series A convertible preferred stock issued in exchange for 23,233 shares of common stock. James B. Murray, Jr. is the trustee of James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 and is the Manager of Praxis Technologies. Entities affiliated with James B. Murray, Jr. collectively beneficially own more than 5% of our capital stock.

(5) Pursuant to the preferred stock purchase and exchange agreement, the stockholder elected to convert certain Series A convertible preferred stock shares into Series A-1 convertible preferred stock shares, as shown in the table below.

Name	Shares of Series A-1 Preferred Stock Received Upon Exchange of Shares of Series A Preferred (#)	Shares of Series A Preferred Stock Exchanged for Shares of Series A-1 Preferred (#)	Series A-1 Convertible Preferred Stock (#)	Aggregate Purchase Price ($)
PBM Capital Investments, LLC (1)	524,274	524,274	1,675,847	2,513,772
Knollwood Investment Fund LLC (2)	—	—	1,675,999	2,514,000
Entities Affiliated with Robert D. Hardie (3)	—	—	1,675,998	2,514,000
Sands Capital Ventures Discovery Fund III, L.P. (4)	—	—	1,675,847	2,513,772
Entities Affiliated with James B. Murray, Jr. (5)	600,567	600,567	857,823	1,025,487

(1) PBM Capital Investments, LLC is affiliated with PBM Capital Group, LLC. Entities affiliated with PBM Capital Group, LLC collectively beneficially own more than 5% of our capital stock. Sean Stalfort, President of PBM Capital Group, LLC, is a director of the Company.

(2) Knollwood Investment Fund LLC is a beneficial owner of greater than 5% of our capital stock.

(3) Represents 837,999 shares of Series A-1 convertible preferred stock purchased by H7 Holdings, LLC and 837,999 shares of Series A-1 convertible preferred stock purchased by Level One Partners, LLC. Robert D. Hardie is the Manager of both H7 Holdings, LLC and Level One Partners, LLC. Entities affiliated with Robert D. Hardie collectively beneficially own more than 5% of our capital stock.

(4) Sands Capital Ventures eFund II, L.P. is affiliated with Sands Capital Management, LLC. Entities affiliated with Sands Capital Management, LLC collectively beneficially own more than 5% of our capital stock. Dr. Stephen Zachary, a Partner at Sands Capital Management, is a director of the Company.

(5) Represents (a) 1,249,251 shares of Series A-1 convertible preferred stock issued to James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 consisting of (i) 559,012 shares of Series A-1 convertible preferred stock issued in exchange for 559,012 shares of Series A convertible preferred stock, and (ii) 690,239 shares of Series A-1 convertible preferred stock issued upon purchase and conversion of $261,250 note principal and interest, and (b) 209,139 shares of Series A-1 convertible preferred stock issued to Praxis Technologies L.P consisting of (i) 41,555 shares of Series A-1 convertible preferred stock issued in exchange for 41,555 shares of Series A convertible preferred stock, and (ii) 167,584 shares of Series A-1 convertible preferred stock issued upon purchase. Entities affiliated with James B. Murray, Jr. collectively beneficially own more than 5% of our capital stock.

In connection with the Series A/A-1 financing, we issued a warrant to purchase up to 666,666 shares of Series A-1 convertible preferred stock at an initial exercise price of $1.875 to PBM Capital Investments, LLC. PBM Capital Investments, LLC is affiliated with PBM Capital Group, LLC. Entities affiliated with PBM Capital

Group, LLC collectively beneficially own more than 5% of our capital stock. Sean Stalfort, President of PBM Capital Group, LLC, is a director of the Company.

Name	Series B Convertible Preferred Stock (#)	Aggregate Purchase Price ($)
Entities Affiliated with RA Capital (1)	7,058,824	18,000,001
PBM ACU Holdings II, LLC (2)	1,955,882	4,987,499
Knollwood Investment Fund LLC (3)	588,235	1,499,999
Entities Affiliated with Sands Capital (4)	1,647,058	4,199,998
James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 (5)	1,176,471	3,000,001
Entities Affiliated with Robert D. Hardie (6)	1,856,236	4,733,402

(1) Represents 5,473,567 shares of Series B convertible preferred stock purchased by RA Capital Healthcare Fund, L.P., 1,058,824 shares of Series B convertible preferred stock purchased by RA Capital Nexus Fund II, L.P., and 526,433 shares of Series B convertible preferred stock purchased by Blackwell Partners LLC – Series A. RA Capital Healthcare Fund, L.P., RA Capital Nexus Fund II, L.P., and Blackwell Partners LLC – Series A are affiliated with RA Capital Management, L.P. Entities affiliated with RA Capital Management, L.P. collectively beneficially own more than 5% of our capital stock. Dr. Laura Stoppel, a Principal at RA Capital Management, is a director of the Company.

(2) PBM ACU Holdings II, LLC is affiliated with PBM Capital Group, LLC. Entities affiliated with PBM Capital Group, LLC collectively beneficially own more than 5% of our capital stock. Sean Stalfort, President of PBM Capital Group, LLC, is a director of the Company.

(3) Knollwood Investment Fund LLC is a beneficial owner of greater than 5% of our capital stock.

(4) Represents 823,529 shares of Series B convertible preferred stock purchased by Sands Capital Global Venture Fund II, L.P. and 823,529 shares of Series B convertible preferred stock purchased by Sands Capital Life Sciences Pulse Fund, LLC. Sands Capital Global Venture Fund II, L.P. and Sands Capital Life Sciences Pulse Fund, LLC are affiliated with Sands Capital Management, LLC. Entities affiliated with Sands Capital Management, LLC collectively beneficially own more than 5% of our capital stock. Dr. Stephen Zachary, a Partner at Sands Capital Management, is a director of the Company.

(5) James B. Murray, Jr. is the trustee of James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991, the purchaser. Entities affiliated with James B. Murray, Jr. collectively beneficially own more than 5% of our capital stock.

(6) Represents 928,118 shares of Series B convertible preferred stock purchased by H7 Holdings, LLC and 928,118 shares of Series B convertible preferred stock purchased by Level One Partners, LLC. Robert D. Hardie is the Manager of both H7 Holdings, LLC and Level One Partners, LLC. Entities affiliated with Robert D. Hardie collectively beneficially own greater than 5% of our capital stock.

Further, pursuant to the Series B purchase agreement, participating investors agreed to purchase 11,782,981 additional shares of Series B convertible preferred stock at a purchase price of $2.55 per share (as adjusted for stock splits, dividends and other similar events), for an aggregate purchase price of $30.0 million upon the occurrence of a milestone event, defined in the Series B purchase agreement as the successful completion of cohort 3 of the single ascending dose portion of the ACU193 Phase 1 clinical trial.

The table below sets forth the aggregate number of shares of Series B convertible preferred stock to be issued to our related parties upon occurrence of the milestone event:

Name	Series B Convertible Preferred Stock (#)	Aggregate Purchase Price ($)
Entities Affiliated with RA Capital (1)	4,705,882	11,999,999
PBM ACU Holdings II, LLC (2)	1,303,922	3,325,001
Knollwood Investment Fund LLC (3)	392,157	1,000,000
Entities Affiliated with Sands Capital (4)	1,098,040	2,800,002
James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 (5)	784,314	2,000,001
Entities Affiliated with Robert D. Hardie (6)	1,237,490	3,155,600

(1) Represents 3,649,045 shares of Series B convertible preferred stock to be purchased by RA Capital Healthcare Fund, L.P., 705,882 shares of Series B convertible preferred stock to be purchased by RA Capital Nexus Fund II, L.P, and 350,955 shares of Series B convertible preferred stock to be purchased by Blackwell Partners LLC – Series A. RA Capital Healthcare Fund, L.P., RA Capital Nexus Fund II, L.P., and Blackwell Partners LLC – Series A are affiliated with RA Capital Management, L.P. Entities affiliated with RA Capital Management, L.P. collectively beneficially own more than 5% of our capital stock. Dr. Laura Stoppel, a Principal at RA Capital, is a director of the Company.

(2) PBM ACU Holdings II, LLC is affiliated with PBM Capital Group, LLC. Entities affiliated with PBM Capital Group, LLC collectively beneficially own more than 5% of our capital stock. Sean Stalfort, President of PBM Capital, LLC, is a director of the Company.

(3) Knollwood Investment Fund LLC is a beneficial owner of greater than 5% of our capital stock.

(4) Represents 549,020 shares of Series B convertible preferred stock to be purchased by Sands Capital Global Venture Fund II, L.P. and 549,020 shares of Series B convertible preferred stock to be purchased by Sands Capital Life Sciences Pulse Fund, LLC. Sands Capital Global Venture Fund II, L.P. and Sands Capital Life Sciences Pulse Fund, LLC are affiliated with Sands Capital Management, LLC. Entities affiliated with Sands Capital Management, LLC collectively beneficially own more than 5% of our capital stock. Dr. Stephen Zachary, a Partner at Sands Capital Management, is a director of the Company.

(5) James B. Murray, Jr. is the trustee of James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991, the purchaser. Entities affiliated with James B. Murray, Jr. collectively beneficially own more than 5% of our capital stock.

(6) Represents 618,745 shares of Series B convertible preferred stock to be purchased by H7 Holdings, LLC and 618,745 shares of Series B convertible preferred stock to be purchased by Level One Partners, LLC. Robert D. Hardie is the Manager of both H7 Holdings, LLC and Level One Partners, LLC. Entities affiliated with Robert D. Hardie collectively beneficially own greater than 5% of our capital stock.

Investors' Rights, Voting and Right of First Refusal Agreements

In connection with the sales of convertible preferred stock described above, we entered into an amended and restated investors' rights agreement, an amended and restated voting agreement and an amended and restated right of first refusal and co-sale agreement containing registration rights, information rights, voting rights and rights of first refusal, among other things, with the holders of our convertible preferred stock. These agreements will terminate upon the closing of this offering, except for the registration rights granted under our amended and restated investors' rights agreement, as more fully described in the section of this prospectus titled "Description of Capital Stock—Registration Rights."

Employment Arrangements

We have entered into employment agreements, consulting agreements or offer letter agreements with certain of our executive officers. For more information regarding our employment agreements and consulting agreements with Daniel O'Connell, Eric Siemers, and Russel Barton, see "Executive Compensation—Agreements with our Named Executive Officers and Potential Payments upon Termination of Employment." We have also entered into an advisory board consulting agreement with Dr. Jeffrey Sevigny, one of our current board members. For more information regarding our consulting agreement with Dr. Sevigny, see "Management—Non-Employee Director Compensation."

Indemnification Agreements

Our amended and restated certificate of incorporation that will be in effect upon the closing of this offering will contain provisions limiting the liability of directors, and our amended and restated bylaws will provide that we will indemnify each of our directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board.

In addition, we have entered into indemnification agreements with each of our directors, and we expect to enter into indemnification agreements with each of our executive officers prior to the closing of this offering. For more information regarding these agreements, see “Executive Compensation—Limitations on Liability and Indemnification Matters.”

Related Person Transaction Policy

Prior to this offering, we have not had a formal policy regarding approval of transactions with related parties. In connection with this offering, we have adopted a related person transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related person transactions, which policy will become effective immediately upon the execution of the underwriting agreement for this offering. For purposes of our policy only, a related person transaction will be a transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we and any related person are, were or will be participants in which the amount involved exceeds $120,000. Transactions involving compensation for services provided to us as an employee or director will not be covered by this policy. A related person will be any executive officer, director or beneficial owner of more than 5% of any class of our voting securities, including any of their immediate family members and any entity owned or controlled by such persons.

Under the policy, if a transaction has been identified as a related person transaction, including any transaction that was not a related person transaction when originally consummated or any transaction that was not initially identified as a related person transaction prior to consummation, our management must present information regarding the related person transaction to our audit committee, or, if audit committee approval would be inappropriate, to another independent body of our board of directors, for review, consideration and approval or ratification. The presentation must include a description of, among other things, the material facts, the interests, direct and indirect, of the related persons, the benefits to us of the transaction and whether the transaction is on terms that are comparable to the terms available to or from, as the case may be, an unrelated third party or to or from employees generally. Under the policy, we will collect information that we deem reasonably necessary from each director, executive officer and, to the extent feasible, significant stockholder to enable us to identify any existing or potential related-person transactions and to effectuate the terms of the policy. In addition, under our Code of Conduct that we expect to adopt prior to the closing of this offering, our employees and directors will have an affirmative responsibility to disclose any transaction or relationship that reasonably could be expected to give rise to a conflict of interest. In considering related person transactions, our audit committee, or other independent body of our board of directors, will take into account the relevant available facts and circumstances including:

- the risks, costs and benefits to us;
- the impact on a director’s independence in the event that the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the availability of other sources for comparable services or products; and
- the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

The policy will require that, in determining whether to approve, ratify or reject a related person transaction, our audit committee, or other independent body of our board of directors, must consider, in light of known circumstances, whether the transaction is in, or is not inconsistent with, our best interests and those of our stockholders, as our audit committee, or other independent body of our board of directors, determines in the good faith exercise of its discretion.

All of the transactions described in this section were entered into prior to the adoption of this policy. Although we have not had a written policy for the review and approval of transactions with related persons, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to a director's or officer's relationship or interest in the agreement or transaction were disclosed to our board of directors. Our board of directors took this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interest of all our stockholders.

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding beneficial ownership of our capital stock by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock;
- each of our directors;
- our named executive officer; and
- all of our current executive officers and directors as a group.

We have determined beneficial ownership in accordance with the rules of the SEC. Under these rules, beneficial ownership includes any shares of common stock as to which the individual or entity has sole or shared voting power or investment power. Applicable percentage ownership is based on shares of common stock outstanding as of , 2021, after giving effect to the conversion of all of our convertible preferred stock. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person, shares of common stock subject to options held by such person that are currently exercisable or will become exercisable within 60 days of March 31, 2021 are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person.

Unless noted otherwise, the address of all listed stockholders is c/o Acumen Pharmaceuticals, Inc., 427 Park St., Charlottesville, Virginia 22902.

Except as indicated by the footnotes below, we believe, based on information furnished to us, that each of the stockholders listed has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable.

Name and Address of Beneficial Owner (1)	Shares	Percentage of Shares Beneficially Owned	
		Before Offering	After Offering
Greater than 5% Stockholders			
Entities affiliated with RA Capital (2)	7,058,824	23.3%	
Entities affiliated with PBM Capital Group, LLC (3)	4,980,001	16.0%	
Entities affiliated with Robert D. Hardie (4)	3,532,234	11.7%	
Entities affiliated with Sands Capital Management LLC (5)	3,322,905	11.0%	
Entities affiliated with James B. Murray, Jr. (6)	2,852,999	9.4%	
Knollwood Investment Fund LLC (7)	2,264,234	7.5%	
Named Executive Officers and Directors			
Daniel O’Connell (8)	610,467	2.0%	
Eric Siemers, M.D. (9)	239,675	*	
Russell Barton, MS (10)	48,031	*	
Jeffrey L. Ives (11)	63,287	*	
Jeffrey Sevigny, M.D. (12)	46,158	*	
Sean Stalfort	—	—	
Laura Stoppel, PhD	—	—	
Stephen Zachary, PhD	—	—	
All current executive officers and directors as a group (8 persons)	1,007,618	3.3%	

* Represents beneficial ownership of less than one percent

(1) Unless otherwise indicated, the business address of each of the directors and executive officers of the company is c/o Acumen Pharmaceuticals Inc., 427 Park St., Charlottesville, VA 22902.

(2) Consists of (a) 5,473,567 shares of common stock issuable upon conversion of Series B convertible preferred stock held by RA Capital Healthcare Fund, L.P. (“RACHF”), (b) 1,058,824 shares of common stock issuable upon conversion of Series B convertible preferred stock held by RA Capital Nexus Fund II, L.P. (“Nexus II”), and (c) 526,433 shares of common stock issuable upon conversion of Series B convertible preferred stock held by Blackwell Partners LLC – Series A (“Blackwell”). RA Capital Management, LP (“RACM”) is the investment adviser to RACHF, Nexus II and Blackwell. RA Capital Healthcare Fund GP, LLC is the general partner of RACHF. The general partner of Nexus II is RA Capital Nexus Fund II GP, LLC. Peter Kolchinsky and Rajeev Shah are the managing members of RACM, RA Capital Healthcare Fund GP, LLC and RA Capital Nexus Fund II GP, LLC and have the power to vote or dispose of the shares held by each entity. The address for Dr. Kolchinsky, Mr. Shah, RACHF and Nexus II is 200 Berkeley Street, 18th Floor, Boston, Massachusetts 02116.

(3) Consists of (a) 1,955,882 shares of common stock issuable upon conversion of Series B convertible preferred stock held by PBM ACU Holdings II, LLC, and (b) 2,200,121 shares of common stock issuable upon conversion of Series A-1 convertible preferred stock, 157,332 shares of common stock issuable upon the exercise of common stock warrants exercisable within 60 days of March 31, 2021 and 666,666 shares of common stock issuable upon the exercise and conversion of preferred stock warrants exercisable within 60 days of March 31, 2021 held by PBM ACU Holdings, LLC. The manager of PBM ACU Holdings II, LLC and PBM ACU Holdings, LLC is PBM Capital Group, LLC. Paul B. Manning is the Chief Executive Officer of PBM Capital Group, LLC and has the power to vote or dispose of the shares held by PBM ACU Holdings II, LLC and PBM ACU Holdings, LLC. The address for PBM ACU Holdings II, LLC, PBM ACU Holdings, LLC, and Paul B. Manning is 200 Garrett Street, Suite S, Charlottesville, VA 22902.

(4) Consists of (a) 928,118 shares of common stock issuable upon conversion of Series B convertible preferred stock and 837,999 shares of common stock issuable upon conversion of Series A-1 preferred stock held by H7 Holdings LLC, and (b) 928,118 shares of common stock issuable upon conversion of Series B convertible preferred stock and 837,999 shares of common stock issuable upon conversion of Series A-1 preferred stock held by Level One Partners, LLC. Robert D. Hardie is the Manager of both H7 Holdings, LLC and Level One Partners, LLC and has the power to vote or dispose of the shares held by each entity. The address for Robert D. Hardie, H7 Holdings, LLC and Level One Partners, LLC is 210 Ridge McIntire Road, Suite 350, Charlottesville, VA 22903.

(5) Consists of (a) 823,529 shares of common stock issuable upon conversion of Series B convertible preferred stock held by Sands Capital Global Venture Fund II, L.P., (b) 823,529 shares of common stock issuable upon conversion of Series B convertible preferred stock held by Sands Capital Life Sciences Pulse Fund, LLC, (c) 1,675,847 shares of common stock issuable upon conversion of Series A-1 convertible preferred stock held by Sands Capital Ventures Discovery Fund III, L.P. The sole general partner of Sands Capital Ventures Discovery Fund III, L.P. is Sands Capital Ventures Discovery Fund III-GP, LLC. The sole general partner of Sands Capital Global Venture Fund II, L.P. is Sands Capital Global Venture Fund II-GP, L.P., and the sole general partner of Sands Capital Global Venture Fund II-GP, L.P. is Sands Capital Global Venture Fund II-GP, LLC. Each of the funds is advised by Sands Capital Ventures, LLC, a registered investment adviser (the “Adviser”). The proxy voting power of the Adviser is exercised by the investment lead covering the company. Frank Sands Jr. holds dispositive power over the shares held by Sands Capital Ventures Discovery Fund III, L.P. Frank Sands Jr., Ian Ratcliffe, and Michael Graninger, acting unanimously, hold dispositive power over the shares held by Sands Capital Global Venture Fund II, L.P. Ian Ratcliffe and Stephen Zachary, acting unanimously, hold dispositive power over the shares held by Sands Capital Life Sciences Pulse Fund, LLC. The address for Sands Capital Global Venture Fund II, L.P., Sands Capital Life Sciences Pulse Fund, LLC, and Sands Capital Ventures Discovery Fund III, L.P., Sands Capital Ventures, LLC and each above-named person holding dispositive power over the shares held by these entities is 1000 Wilson Blvd, Suite 3000, Arlington, VA 22209.

(6) Consists of (a) 53 shares of common stock, 43,692 shares of common stock issuable upon conversion of Series A convertible preferred stock, 1,249,251 shares of common stock issuable upon conversion of Series A-1 convertible preferred stock, 1,176,471 shares of common stock issuable upon conversion of Series B

convertible preferred stock, and 169,143 shares of common stock issuable upon the exercise of common stock warrants exercisable within 60 days of March 31, 2021 held by James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991, and (b) 209,139 shares of common stock issuable upon conversion of Series A-1 convertible preferred stock and 5,250 shares of common stock issuable upon the exercise of common stock warrants exercisable within 60 days of March 31, 2021 held by Praxis Technologies L.P. James B. Murray, Jr. is the trustee of James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991 and the Manager of Praxis Technologies, L.P. and has the power to vote or dispose of shares held by each entity. The address for James B. Murray, Jr., James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991, and Praxis Technologies, L.P. is 427 Park St., Charlottesville, VA 22902.

(7) Consists of 588,235 shares of common stock issuable upon conversion of Series B convertible preferred stock and 1,675,999 shares of common stock issuable upon conversion of Series A-1 convertible preferred stock held by Knollwood Investment Fund LLC. Knollwood Investment Advisory, LLC is the Managing Member of Knollwood Investment Fund LLC. Kevin D. Irwin is the President of Knollwood Investment Advisory, LLC and has the power to vote or dispose of the shares held by Knollwood Investment Fund LLC. The address for Knollwood Investment Fund LLC., Knollwood Investment Advisory, LLC, and Kevin D. Irwin is 217 International Cir., Hunt Valley, MD 21030.

(8) Consists of 2,110 shares of common stock, 184 shares of common stock issuable upon conversion of Series A convertible preferred stock, 53 shares of common stock issuable upon the exercise of common stock warrants exercisable within 60 days of March 31, 2021, and 608,120 shares of common stock issuable upon the exercise of options exercisable within 60 days of March 31, 2021.

(9) Consists of 239,675 shares of common stock issuable upon the exercise of options exercisable within 60 days of March 31, 2021.

(10) Consists of 48,031 shares of common stock issuable upon the exercise of options exercisable within 60 days of March 31, 2021.

(11) Consists of 63,287 shares of common stock issuable upon the exercise of options exercisable within 60 days of March 31, 2021.

(12) Consists of 46,158 shares of common stock issuable upon the exercise of options exercisable within 60 days of March 31, 2021.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock, certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws, as each will be in effect following the completion of this offering, and certain provisions of Delaware law are summaries. You should also refer to the amended and restated certificate of incorporation and the amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

General

Upon the completion of this offering, our amended and restated certificate of incorporation will authorize us to issue up to shares of common stock, $0.0001 par value per share, and shares of preferred stock, $0.0001 par value per share, all of which shares of preferred stock will be undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time.

As of December 31, 2020, we had outstanding 624,635 shares of common stock, held by 79 stockholders of record. As of December 31, 2020, after giving effect to the conversion of all of the outstanding shares of our convertible preferred stock, including 711,203 shares of our Series A convertible preferred stock, 11,231,511 shares of our Series A-1 convertible preferred stock and 17,674,469 shares of our Series B convertible preferred stock issued, into shares of common stock, there would have been shares of common stock issued and outstanding, held by stockholders of record.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. The affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of capital stock, voting as a single class, will be required to amend certain provisions of our amended and restated certificate of incorporation, including provisions relating to amending our amended and restated bylaws, the classified board, the size of our board, removal of directors, director liability, vacancies on our board, special meetings, stockholder notices, actions by written consent and exclusive forum.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the right of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred Stock

As of December 31, 2020, there were 29,617,183 shares of our preferred stock outstanding consisting of 711,203 shares of our Series A convertible preferred stock, 11,231,511 shares of our Series A-1 convertible preferred stock, and 17,674,469 shares of our Series B convertible preferred stock. All currently outstanding shares of convertible preferred stock will be converted into an aggregate of shares of common stock upon the closing of this offering.

Following the closing of this offering, our board of directors will have the authority under our amended and restated certificate of incorporation, without further action by our stockholders, to issue up to shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of us and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until the board of directors determines the specific rights attached to that preferred stock.

We have no present plans to issue any shares of preferred stock following the completion of this offering.

Options

As of December 31, 2020, there were options to purchase shares of common stock outstanding. For additional information regarding the terms of our Amended and Restated Stock Performance Plan and our 2021 Equity Incentive Plan, see “Executive Compensation—Equity Incentive Plans.”

Warrants

As of December 31, 2020, there were outstanding immediately exercisable warrants to purchase up to 574,760 shares of our common stock at an exercise price of $3.00 per share and 666,666 shares of our Series A-1 preferred stock at an exercise price of $1.875 per share. Upon completion of this offering, the warrant to purchase shares of Series A-1 preferred stock will be automatically exercised for the purchase of an aggregate of shares of our common stock.

Registration Rights

We, the holders of our existing convertible preferred stock and certain holders of our existing common stock have entered into an amended and restated investors’ rights agreement. The registration rights provisions of this agreement provide those holders with demand, piggyback and Form S-3 registration rights with respect to the shares of common stock currently held by them and issuable to them upon conversion of our convertible preferred stock in connection with our initial public offering. These shares are collectively referred to herein as registrable securities.

Demand Registration Rights

At any time beginning 180 days following the effective date of the registration statement of which this prospectus is a part, the holders of a majority of registrable securities then outstanding have the right to demand that we file a registration statement covering registrable securities then outstanding having an aggregate offering price of at least $5.0 million, net of certain selling expenses. These registration rights are subject to specified conditions and limitations, including the right of the underwriters, if any, to limit the number of shares included in any such registration under specified circumstances. Upon such a request, we are required to effect the registration as soon as practicable, but in any event no later than 60 days after the receipt of such request. An aggregate of shares of common stock will be entitled to these demand registration rights.

Piggyback Registration Rights

If we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, the holders of registrable securities will each be entitled to notice of the registration and will be entitled to include their shares of common stock in the registration statement. These piggyback registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under specified circumstances. An aggregate of shares of common stock will be entitled to these piggyback registration rights.

Registration on Form S-3

At any time after we become eligible to file a registration statement on Form S-3, the holders of at least 30% of registrable securities then outstanding will be entitled to request to have such shares registered by us on a Form S-3 registration statement. These Form S-3 registration rights are subject to other specified conditions and limitations, including the condition that the anticipated aggregate offering price, net of certain selling expenses, is at least $5.0 million. Upon receipt of this request, the holders of registrable securities will each be entitled to participate in this registration. An aggregate of shares of common stock will be entitled to these Form S-3 registration rights.

Expenses of Registration

We are required to pay all expenses, including fees and expenses of one counsel to represent the selling stockholders (up to $50,000 total), relating to any demand, piggyback or Form S-3 registration, other than underwriting discounts and commissions, stock transfer taxes and any additional fees of counsel for the selling stockholders, subject to specified conditions and limitations. We are not required to pay registration expenses if a demand registration request is withdrawn at the request of a majority of holders of registrable securities to be registered, unless holders of a majority of the registrable securities agree to forfeit their right to one demand registration.

The amended and restated investors’ rights agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the applicable registration statement attributable to us, and the selling stockholders are obligated to indemnify us for material misstatements or omissions in the registration statement attributable to them, subject to certain limitations.

Termination of Registration Rights

The registration rights granted under the investors’ rights agreement will terminate with respect to any particular stockholder upon the earlier of (a) the closing of a deemed liquidation event, as defined in our certificate of incorporation, (b) the third anniversary of the closing of this offering and (c) with respect to each stockholder, at such time such stockholder is able to sell all of its shares pursuant to Rule 144 or another similar exemption under the Securities Act during a three-month period without registration.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66$^{2}/_{3}$% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include the following:

- any merger or consolidation involving the corporation or any direct or indirect majority-owned subsidiary of the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder (in one transaction or a series of transactions);
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation or by any direct or indirect majority-owned subsidiary of the corporation of any stock of the corporation or of such subsidiary to the interested stockholder;
- any transaction involving the corporation or any direct or indirect majority-owned subsidiary of the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our amended and restated certificate of incorporation to be in effect upon the completion of this offering, or our restated certificate, will provide for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the

other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. Our restated certificate and our amended and restated bylaws to be effective upon the completion of this offering, or our restated bylaws, will also provide that directors may be removed by the stockholders only for cause upon the vote of 66$^{2}/_{3}$% or more of our outstanding common stock. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum.

Under our restated certificate of incorporation and amended and restated bylaws our stockholders will not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Our restated certificate and restated bylaws will also provide that all stockholder actions must be effected at a duly called meeting of stockholders and will eliminate the right of stockholders to act by written consent without a meeting. Our restated bylaws will also provide that only our Chairman of the board, Chief Executive Officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

Our restated bylaws will also provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and will specify requirements as to the form and content of a stockholder's notice.

Our restated certificate and restated bylaws will provide that the stockholders cannot amend many of the provisions described above except by a vote of 66$^{2}/_{3}$% or more of our outstanding common stock.

As described in "—Preferred Stock" above, our restated certificate will give our board of directors the authority, without further action by our stockholders, to issue up to   shares of preferred stock in one or more series, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change in control.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our amended and restated certificate of incorporation to be effective on the completion of this offering will provide that the Court of Chancery of the State of Delaware (or, if and only if, the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if, all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom shall be the sole and exclusive forum for the following claims or causes of action brought under Delaware statutory or common law: (1) any derivative claim or action brought on our behalf; (2) any claim or cause of action asserting a breach of fiduciary duty by any of our current or former director, officer or other employee; (3) any claim or cause of action asserting a claim against us arising out of, or pursuant to, the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws; (4) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws (including any right, obligation, or remedy thereunder); (5) any claim or cause of action as to which the DGCL confers jurisdiction to the Court of Chancery of the State of Delaware; or (6) any claim or cause of action asserting a claim against us or any of our directors, officers or other employees, that is governed by the internal affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court having personal jurisdiction over the indispensable parties named as defendants. The aforementioned provision will not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act, the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction.

In addition, our amended and restated certificate of incorporation will further provide that, unless we consent writing to the selection of an alternative forum, the federal district courts of the United States of America will be the exclusive forum, to the fullest extent permitted by law, for resolving any complaint asserting a cause or causes of action arising under the Securities Act, including all causes of action asserted against any defendant to such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering.

The enforceability of similar choice of forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with one or more actions or proceedings described above, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is   . The transfer agent’s address is   .

Listing

We intend to apply for listing of our common stock on the Nasdaq Global Market under the trading symbol “ABOS.”

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based on the number of shares outstanding as of December 31, 2020, upon the closing of this offering and assuming no exercise of the underwriters' option to purchase additional shares, shares of common stock will be outstanding, assuming no outstanding options are exercised. All of the shares of common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, except for any shares sold to our "affiliates," as that term is defined under Rule 144 under the Securities Act. The remaining shares of common stock held by existing stockholders are "restricted securities," as that term is defined in Rule 144 under the Securities Act. Restricted securities may be sold in the public market only if registered or if their resale qualifies for exemption from registration described below under Rule 144 promulgated under the Securities Act or another available exemption.

As a result of the lock-up agreements described below and the provisions of Rules 144 and 701 under the Securities Act, the shares of common stock that will be deemed restricted securities after this offering will be available for sale in the public market as follows:

- none of the existing shares will be eligible for immediate sale upon the completion of this offering; and
- shares will be eligible for sale in the public market upon expiration of lock-up agreements 180 days after the date of this prospectus, subject in certain circumstances to the volume, manner of sale and other limitations under Rule 144 and Rule 701 under the Securities Act, which are summarized below.

Rule 144

In general, non-affiliate persons who have beneficially owned restricted shares of our common stock for at least six months, and any affiliate of the company who owns either restricted or unrestricted shares of our common stock, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

Non-Affiliates

Any person who is not deemed to have been one of our affiliates at the time of, or at any time during the three months preceding, a sale may sell an unlimited number of restricted securities under Rule 144 if:

- the restricted securities have been held for at least six months, including the holding period of any prior owner other than one of our affiliates (subject to certain exceptions);
- we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale; and
- we are current in our Exchange Act reporting at the time of sale.

Any person who is not deemed to have been an affiliate of ours at the time of, or at any time during the three months preceding, a sale and has held the restricted securities for at least one year, including the holding

period of any prior owner other than one of our affiliates, will be entitled to sell an unlimited number of restricted securities without regard to the length of time we have been subject to Exchange Act periodic reporting or whether we are current in our Exchange Act reporting. Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

Affiliates

Persons seeking to sell restricted securities who are our affiliates at the time of, or any time during the three months preceding, a sale, would be subject to the restrictions described above. They are also subject to additional restrictions, by which such person would be required to comply with the manner of sale and notice provisions of Rule 144 and would be entitled to sell within any three-month period only that number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after the completion of this offering based on the number of shares outstanding as of December 31, 2020; or

- the average weekly trading volume of our common stock on the stock exchange on which our shares are listed during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Additionally, persons who are our affiliates at the time of, or any time during the three months preceding, a sale may sell unrestricted securities under the requirements of Rule 144 described above, without regard to the six-month holding period of Rule 144, which does not apply to sales of unrestricted securities.

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and in the section titled “Underwriting” and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Form S-8 Registration Statements

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of common stock subject to outstanding stock options and common stock issued or issuable under our equity plans. We expect to file the registration statement covering shares offered pursuant to our stock plans as soon as practicable after the closing of this offering, permitting the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144 and expiration or release from the terms of the lock-up agreements described above.

Lock-Up Agreements

We, our executive officers and directors and substantially all of the holders of our common stock outstanding on the date of this prospectus have entered into lock-up agreements with the underwriters or otherwise agreed, subject to certain exceptions, that we and they will not, directly or indirectly, offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale, or otherwise dispose of or hedge any

of our shares of common stock, any options or warrants to purchase shares of our common stock, or any securities convertible into, or exchangeable for or that represent the right to receive shares of our common stock, without the prior written consent of BofA Securities, Inc. for a period of 180 days from the date of this prospectus.

In addition to the restrictions contained in the lock-up agreements described above, we have entered into an agreement with the holders of our convertible preferred stock that contains market stand-off provisions imposing restrictions on the ability of such security holders to sell or otherwise transfer or dispose of any registrable securities for a period of 180 days following the date of this prospectus.

Registration Rights

Upon the closing of this offering, the holders of shares of our common stock, including common stock issuable upon the conversion of our convertible preferred stock, or their transferees, will be entitled to specified rights with respect to the registration of their registrable shares under the Securities Act, subject to certain limitations and the expiration, waiver or termination of the lock-up agreements. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon effectiveness of the registration. See “Description of Capital Stock—Registration Rights” for additional information.

CERTAIN MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a summary of certain material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income, and does not address any estate or gift tax consequences or any tax consequences arising under any state, local or foreign tax laws, or any other U.S. federal tax laws. This discussion is based on the Internal Revenue Code of 1986, as amended (the Code), Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service (IRS), all as in effect on the date of this prospectus. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-U.S. holders who purchase our common stock pursuant to this offering and who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all of the U.S. federal income tax consequences that may be relevant to an individual non-U.S. holder in light of such non-U.S. holder's particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to non-U.S. holders subject to special rules under the U.S. federal income tax laws, including:

- U.S. expatriates and certain former citizens or long-term residents of the United States;
- partnerships or other pass-through entities (entities or arrangements treated as partnerships for U.S. federal income tax purposes and investors therein);
- "controlled foreign corporations";
- "passive foreign investment companies";
- corporations that accumulate earnings to avoid U.S. federal income tax;
- banks, financial institutions, investment funds, insurance companies, brokers, dealers or traders in securities;
- tax-exempt organizations and governmental organizations;
- tax-qualified retirement plans;
- persons who hold or acquire our common stock through the exercise of an option or otherwise as compensation;
- qualified foreign pension funds as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds;
- persons subject to the alternative minimum tax;
- persons subject to special tax accounting rules under Section 451(b) of the Code;
- persons that own or have owned, actually or constructively, more than 5% of our common stock;
- persons who have elected to mark securities to market; and

- persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Partnerships holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular U.S. federal income tax consequences to them of holding and disposing of our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS AND ANY OTHER U.S. FEDERAL TAX LAWS.

Definition of Non-U.S. Holder

For purposes of this discussion, a non-U.S. holder is any beneficial owner of our common stock that is not a “U.S. holder” or a partnership (including any entity or arrangement treated as a partnership) for U.S. federal income tax purposes. A U.S. holder is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (1) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons (within the meaning of Section 7701(a)(30) of the Code) who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Distributions on Our Common Stock

As described under the section titled “Dividend Policy,” we do not anticipate declaring or paying, in the foreseeable future, any cash distributions on our capital stock. However, if we distribute cash or other property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and will first be applied against and reduce a holder’s tax basis in our common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under the section titled “ —Gain on Disposition of Our Common Stock” below.

Subject to the discussions below regarding effectively connected income, backup withholding and FATCA (as defined below), dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or our withholding agent with a valid IRS Form W-8BEN (in the case of individuals) or IRS Form W-8BEN-E

(in the case of entities), or other appropriate form, certifying such holder's qualification for the reduced rate. This certification must be provided to us or our withholding agent before the payment of dividends and must be updated periodically. In the case of a non-U.S. Holder that is an entity, Treasury Regulations and the relevant tax treaty provide rules to determine whether, for purposes of determining the applicability of the tax treaty, dividends will be treated as paid to the entity or to those holding an interest in the entity. If the non-U.S. holder holds our common stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our withholding agent, either directly or through other intermediaries.

If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on our common stock are effectively connected with such holder's U.S. trade or business (and are attributable to such holder's permanent establishment or fixed base in the United States if required by an applicable tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) to the applicable withholding agent.

However, any such effectively connected dividends paid on our common stock generally will be subject to U.S. federal income tax on a net income basis at the regular U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items.

Non-U.S. holders that do not provide the required certification on a timely basis, but that qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Gain on Disposition of Our Common Stock

Subject to the discussions below regarding backup withholding and FATCA (as defined below), a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized on the sale or other taxable disposition of our common stock, unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States;

- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition, and certain other requirements are met; or

- our common stock constitutes a "United States real property interest" (USRPI) by reason of our status as a United States real property holding corporation (USRPHC) for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our USRPIs interests relative to the fair market value of our other trade or business assets and our foreign real property interests. We believe that we are not currently and we do not anticipate becoming a USRPHC for U.S. federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular U.S. federal income tax rates in the same manner as if such holder were a resident

of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses. Gain described in the third bullet point above will generally be subject to U.S. federal income tax in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply.

Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Annual reports are required to be filed with the IRS and provided to each non-U.S. holder indicating the distributions on our common stock paid to such holder and any tax withheld with respect to those distributions. These information reporting requirements apply even if no withholding was required because the distributions were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-U.S. holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, otherwise establishes an exemption, and if the payor does not have actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-U.S. holder should consult with a U.S. tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any.

Withholding on Foreign Entities

Sections 1471 through 1474 of the Code, which are commonly referred to as FATCA, impose a U.S. federal withholding tax of 30% on certain payments made to a "foreign financial institution" (as specially defined under these rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding certain U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or an exemption applies. FATCA also generally will impose a U.S. federal withholding tax of 30% on certain payments made to a non-financial foreign entity unless such entity provides the withholding agent a certification identifying certain direct and indirect U.S. owners of the entity or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock and would have applied also to payments of gross proceeds from the sale or other disposition of our common stock. The U.S. Treasury Department has released proposed regulations under FATCA providing for the elimination of the federal withholding tax of 30% applicable to gross proceeds of a sale or other disposition of our common stock. Under these proposed Treasury Regulations (which may be relied upon by taxpayers prior to finalization), FATCA will not apply to gross proceeds from sales or other dispositions of our common stock.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

UNDERWRITING

BofA Securities, Inc., Credit Suisse Securities (USA) LLC and Stifel, Nicolaus & Company, Incorporated are acting as representatives of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
BofA Securities, Inc.	
Credit Suisse Securities (USA) LLC	
Stifel, Nicolaus & Company, Incorporated	
UBS Securities LLC	
Total	

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus and to dealers at that price less a concession not in excess of $ per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	$	$	$
Underwriting discount	$	$	$
Proceeds, before expenses, to us	$	$	$

The expenses of the offering, not including the underwriting discount, are estimated at $ and are payable by us. We have agreed to reimburse the underwriters for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority and other regulatory fees up to $.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus, to purchase up to additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers and directors and our other existing security holders that collectively own % of our stock before this offering have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 180 days after the date of this prospectus without first obtaining the written consent of BofA Securities, Inc. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly

- offer, pledge, sell or contract to sell any common stock,
- sell any option or contract to purchase any common stock,
- purchase any option or contract to sell any common stock,
- grant any option, right or warrant for the sale of any common stock,
- lend or otherwise dispose of or transfer any common stock,
- request or demand that we file or make a confidential submission of a registration statement related to the common stock, or
- enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock, or the Lock-Up Securities. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition.

The agreements of our officers, directors and holders of substantially all of our common stock do not apply to (a) (i) transfers made as a *bona fide* gift or gifts, including, without limitation, to a charitable organization or educational institution, or for *bona fide* estate planning purposes, (ii) transfers to any immediate family member of such holder or to any trust for the direct or indirect benefit of such holder or the immediate family of such holder, (iii) if such holder is a trust, transfers to a trustor, trustee or beneficiary of such trust or to the estate of a trustor, trustee or beneficiary of such trust, (iv) transfers made as a distribution to partners, members, managers, equity holders or stockholders of such holder, or (v) transfers to such holder's affiliates or to any investment fund or other entity controlled or managed by, controlling or managing, or under common control with, such holder or affiliates of such holder, *provided that* the transferee or distributee agrees to such restrictions for the remainder of the 180-day period, any such transfer does not involve a disposition for value, and such transfers or distributions are not required to be reported with the SEC on Form 4 and no public filing or report regarding such transfers is voluntarily effected during the remainder of the 180-day period; (b) transfers made (i) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or any immediate family of such holder, (ii) pursuant to a court or regulatory agency order, a qualified domestic

order or in connection with a divorce settlement; or (iii) to us pursuant to any contractual arrangement that provides us with an option to repurchase such Lock-Up Securities in connection with the termination of such holder's employment or other service relationship with us, or pursuant to a right of first refusal with respect to transfers of such Lock-Up Securities or to cover taxes due upon or the consideration required in connection with the vesting, conversion or exercise of securities issued under an equity incentive plan or stock purchase plan of the Company, including through the withholding of shares by, or surrender of shares to, us pursuant to a "cashless" or "net exercise" settlement feature, *provided that* the transferee or distributee agrees to such restrictions for the remainder of the 180-day period, in the case of any transfer pursuant to (b)(i) above, such transfer does not involve a disposition for value, and any filing under the Exchange Act required to be made during the remainder of the 180-day period shall clearly indicate in the footnotes thereto that the filing relates to circumstances described above; (c) prevent or restrict (i) the exercise, vesting or settlement of any outstanding warrant, or any option to purchase common stock or other equity awards pursuant to any stock incentive plan or stock purchase plan of the Company (including in each case by "net" or "cashless" exercise), *provided that* the underlying shares shall continue to be subject to the transfer restrictions, (ii) the establishment of a plan of disposition that complies with Rule 10b5-1 under the Exchange Act (a "10b5-1 Plan"), or the amendment of an existing 10b5-1 Plan, so long as such plan does not provide for sales of Lock-Up Securities during the remainder of the 180-day period; and *provided that* the establishment of a 10b5-1 Plan or the amendment of a 10b5-1 Plan, in either case, providing for sales of Lock-Up Securities shall only be permitted if (1) the establishment or amendment of such plan is not required to be reported during the Lock-Up Period in any public report or filing with the SEC or otherwise, and (2) such holder does not otherwise voluntarily effect any public filing or report regarding the establishment or amendment of such plan during the remainder of the 180-day period, (iii) the conversion of the outstanding shares of preferred stock of the Company into shares of common stock, provided that any such shares of common stock received upon such conversion shall be subject to the transfer restrictions, or (iv) the transfer of Lock-Up Securities pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of common stock and involving a change of control of the Company, provided that in the event that the tender offer, merger, consolidation or other such transaction is not complete, the Lock-Up Securities owned by such shall remain subject to the restrictions contained in the lock-up agreement; (d) sales of common stock purchased by such holder in this offering if and only if (i) such sales are not required to be reported in any public report or filing with the SEC, or otherwise and (2) such holder does not otherwise voluntarily effect any public filing or report regarding such sales; or (e) sales of common stock purchased by such holder in the open market after the date of this prospectus, provided that any filing under the Exchange Act required to be made during the reminder of the 180-day period with respect to such sale shall clearly indicate in the footnotes thereto that such common stock was purchased in the open market after the date of this offering and is not subject to the terms of the transfer restrictions.

Nasdaq Global Market Listing

We expect the shares to be approved for listing on the Nasdaq Global Market, subject to notice of issuance, under the symbol "ABOS."

Before this offering, there has been no public market for our common stock. The initial public offering price will be determined through negotiations between us and the representatives. In addition to prevailing market conditions, the factors to be considered in determining the initial public offering price are

- the valuation multiples of publicly traded companies that the representatives believe to be comparable to us,
- our financial information,
- the history of, and the prospects for, our company and the industry in which we compete,
- an assessment of our management, its past and present operations, and the prospects for, and timing of, our future revenues,

- the present state of our development, and
- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

An active trading market for the shares may not develop. It is also possible that after the offering the shares will not trade in the public market at or above the initial public offering price.

The underwriters do not expect to sell more than 5% of the shares in the aggregate to accounts over which they exercise discretionary authority.

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. "Naked" short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

European Economic Area

In relation to each Member State of the European Economic Area (each a "Relevant State"), no offer of shares which are the subject of this offering has been, or will be, made to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation), except that offers of shares may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

a. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

c. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require the Issuer or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

Each person in a Relevant State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with the Company and the underwriters that it is a qualified investor within the meaning of the Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Article 5(1) of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in a Relevant State to qualified investors, in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of

the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

The above selling restriction is in addition to any other selling restrictions set out below.

In connection with the offering, the underwriters are not acting for anyone other than the issuer and will not be responsible to anyone other than the issuer for providing the protections afforded to their clients nor for providing advice in relation to the offering.

Notice to Prospective Investors in the United Kingdom

In relation to the United Kingdom, or the UK, no offer of shares which are the subject of this offering has been, or will be, made to the public in the UK prior to the publication of a prospectus in relation to the shares which has been approved by the Financial Conduct Authority in the UK in accordance with the UK Prospectus Regulation and the FSMA, except that offers of shares may be made to the public in the UK at any time under the following exemptions under the UK Prospectus Regulation and the FSMA:

a. to any legal entity which is a qualified investor as defined under the UK Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

c. at any time in other circumstances falling within section 86 of the FSMA,

provided that no such offer of shares shall require the Issuer or any underwriter to publish a prospectus pursuant to Section 85 of the FSMA or Article 3 of the UK Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

Each person in the UK who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with the Company and the underwriters that it is a qualified investor within the meaning of the UK Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Article 5(1) of the UK Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in the UK to qualified investors, in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares in the UK means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, the expression "UK Prospectus Regulation" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018, and the expression "FSMA" means the Financial Services and Markets Act 2000.

In connection with the offering, the underwriters are not acting for anyone other than the issuer and will not be responsible to anyone other than the issuer for providing the protections afforded to their clients nor for providing advice in relation to the offering.

This document is for distribution only to persons who (i) have professional experience in matters relating to investments and who qualify as investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Financial Promotion Order"), (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations etc.") of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended, or FSMA) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as "relevant persons"). This document is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, or ASIC, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the "Corporations Act"), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the "Exempt Investors") who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the shares were not offered or sold or caused to be made the subject of an invitation for subscription or purchase and will not be offered or sold or caused to be made the subject of an invitation for subscription or purchase, and this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, has not been circulated or distributed, nor will it be circulated or distributed, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended

from time to time (the “SFA”)) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries’ rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

(a) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law; or

(d) as specified in Section 276(7) of the SFA.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the representatives are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Cooley LLP, Reston, Virginia. Certain legal matters will be passed upon for the underwriters by Ropes & Gray LLP, Boston, Massachusetts.

EXPERTS

The financial statements of Acumen Pharmaceuticals, Inc. as of December 31, 2019 and 2020 and for the years then ended, appearing in this prospectus and registration statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to our company and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the internet at the SEC’s website at www.sec.gov. Upon completion of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available at www.sec.gov.

We also maintain a website at www.acumenpharm.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

ACUMEN PHARMACEUTICALS, INC.
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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Acumen Pharmaceuticals, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Acumen Pharmaceuticals, Inc. (the Company) as of December 31, 2020 and 2019, the related statements of operations, changes in convertible preferred stock and stockholders' deficit and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditors since 2021.

Tysons, Virginia
April 9, 2021

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ACUMEN PHARMACEUTICALS, INC.
BALANCE SHEETS
(in thousands, except share and per share data)

	December 31, 2019	December 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	$ 6,552	$ 43,777
Grant receivable	30	109
Prepaid expenses and other current assets	596	543
Total current assets	7,178	44,429
Prepaid service agreements, long-term	144	—
Total assets	**$ 7,322**	**$ 44,429**
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT		
Current liabilities		
Accounts payable	$ 223	$ 531
Accrued expenses and other current liabilities	542	423
Preferred stock tranche rights liability	—	5,033
Preferred stock warrant liability	577	380
Total liabilities	1,342	6,367
Series A convertible preferred stock, $0.0001 par value; 802,972 and 711,203 shares authorized as of December 31, 2019 and 2020; 711,203 shares issued and outstanding as of December 31, 2019 and 2020; liquidation preference of $1,067 as of December 31, 2019 and 2020	1,067	1,067
Series A-1 convertible preferred stock, $0.0001 par value; 12,710,059 and 11,898,177 shares authorized as of December 31, 2019 and 2020; 11,231,511 shares issued and outstanding as of December 31, 2019 and 2020; liquidation preference of $16,847 as of December 31, 2019 and 2020	16,333	16,333
Series B convertible preferred stock, $0.0001 par value; 29,457,450 shares authorized as of December 31, 2020; 17,674,469 shares issued and outstanding as of December 31, 2020; liquidation preference of $45,070 as of December 31, 2020	—	39,253
Stockholders' deficit		
Common stock, $0.0001 par value; 17,400,000 and 50,500,000 shares authorized as of December 31, 2019 and 2020, respectively; 624,635 shares issued and outstanding as of December 31, 2019 and 2020	—	—
Additional paid-in capital	8,220	8,374
Accumulated deficit	(19,640)	(26,965)
Total stockholders' deficit	(11,420)	(18,591)
Total liabilities, convertible preferred stock and stockholders' deficit	**$ 7,322**	**$ 44,429**

The accompanying notes are an integral part of these financial statements.

ACUMEN PHARMACEUTICALS, INC.
STATEMENTS OF OPERATIONS
(in thousands, except share and per share data)

	For the Year Ended December 31,	
	2019	**2020**
Grant and other revenue	$ 1,697	$ 1,436
Operating expenses:		
Research and development	8,576	7,997
General and administrative	926	1,351
Total operating expenses	9,502	9,348
Loss from operations	(7,805)	(7,912)
Other income (expense)		
Interest income	45	1
Change in fair value of preferred stock tranche rights liability and preferred stock warrant liability	(147)	586
Total other income (expense)	(102)	587
Net loss	**(7,907)**	**(7,325)**
Contribution related to common stock exchanged for Series A convertible preferred stock	221	—
Net loss attributable to common stockholders	**$ (7,686)**	**$ (7,325)**
Net loss per common share, basic and diluted	$ (11.97)	$ (11.73)
Weighted-average shares outstanding, basic and diluted	642,053	624,635

The accompanying notes are an integral part of these financial statements.

ACUMEN PHARMACEUTICALS, INC.
STATEMENT OF CHANGES IN CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT
(in thousands, except share data)

	Series A Convertible Preferred Stock		Series A-1 Convertible Preferred Stock		Series B Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance as of December 31, 2018	**774,352**	**$ 1,162**	**6,959,649**	**$ 9,929**	**—**	**$ —**	**666,687**	**$ —**	**$ 8,116**	**$ (11,733)**	**$ (3,617)**
Share-based compensation	—	—	—	—	—	—	—	—	174	—	174
Stock option exercises	—	—	—	—	—	—	9,463	—	7	—	7
Exchange of common stock for Series A convertible preferred stock	51,515	77	—	—	—	—	(51,515)	—	(77)	—	(77)
Exchange of Series A convertible preferred stock for Series A-1 convertible preferred stock	(114,664)	(172)	114,664	172	—	—	—	—	—	—	—
Issuance of Series A-1 convertible preferred stock, net of $4 issuance costs	—	—	4,157,198	6,232	—	—	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	—	—	(7,907)	(7,907)
Balance as of December 31, 2019	**711,203**	**$ 1,067**	**11,231,511**	**$ 16,333**	**—**	**$ —**	**624,635**	**$ —**	**$ 8,220**	**$ (19,640)**	**$ (11,420)**
Issuance of Series B convertible preferred stock for cash, net of issuance costs of $395	—	—	—	—	17,674,469	39,253	—	—	—	—	—
Share-based compensation	—	—	—	—	—	—	—	—	154	—	154
Net loss	—	—	—	—	—	—	—	—	—	(7,325)	(7,325)
Balance as of December 31, 2020	**711,203**	**$ 1,067**	**11,231,511**	**$ 16,333**	**17,674,469**	**$ 39,253**	**624,635**	**$ —**	**$ 8,374**	**$ (26,965)**	**$ (18,591)**

The accompanying notes are an integral part of these financial statements.

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ACUMEN PHARMACEUTICALS, INC.
STATEMENTS OF CASH FLOWS
(in thousands)

	For the Year Ended December 31,	
	2019	2020
Cash flows from operating activities		
Net loss	$(7,907)	$ (7,325)
Adjustments to reconcile net loss to net cash used in operating activities:		
Change in fair value of preferred stock tranche rights liability and preferred stock warrant liability	147	(586)
Stock-based compensation expense	174	154
Changes in operating assets and liabilities:		
Grant receivable	200	(79)
Prepaid expenses and other current assets	6	53
Other assets	(80)	144
Accounts payable	110	308
Accrued expenses and other current liabilities	532	(119)
Net cash used in operating activities	(6,818)	(7,450)
Cash flows from financing activities		
Proceeds from issuance of convertible preferred stock, net of issuance costs	6,232	44,675
Proceeds from stock options exercises	7	—
Net cash provided by financing activities	6,239	44,675
Net change in cash and cash equivalents	(579)	37,225
Cash and cash equivalents, at the beginning of the period	7,131	6,552
Cash and cash equivalents, at the end of the period	**$ 6,552**	**$43,777**
Supplemental disclosure of cash flow information:		
Cash paid for income taxes	$ —	$ —
Cash paid for interest	$ —	$ —
Supplemental disclosure of noncash financing activities:		
Exchange of common stock for Series A convertible preferred stock	$ 77	$ —
Exchange of Series A convertible preferred stock for Series A-1 convertible preferred stock	$ 172	$ —

The accompanying notes are an integral part of these financial statements.

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

NOTE 1. DESCRIPTION OF ORGANIZATION AND BUSINESS OPERATIONS

Acumen Pharmaceuticals, Inc. (“Acumen” or the “Company”) was incorporated in 1996 in the state of Delaware. Acumen discovers and develops targeted therapies for the treatment of Alzheimer’s disease. Acumen’s lead drug candidate, ACU193, is a subclass monoclonal antibody which selectively targets amyloid-beta oligomers (AbO). Acumen and Merck & Co. discovered and developed ACU193 through an eight-year research collaboration. Acumen currently holds exclusive rights to the program. The Company submitted an Investigation Drug Application (“IND”) for ACU193 to the Food and Drug Administration (“FDA”) in the fourth quarter of 2020. We initiated a Phase 1 clinical trial of ACU193 in patients with early Alzheimer’s disease in the second quarter of 2021.

The Company is subject to the uncertainty of whether the Company’s intellectual property will develop into successful commercial products.

Reverse Stock Split

On November 20, 2020, the Company effected a 1:30 reverse stock split of its authorized, issued and outstanding shares of common stock and convertible preferred stock. Accordingly, all share and per share amounts for the periods presented in the accompanying financial statements and these notes have been adjusted retroactively, where applicable, to reflect this reverse stock split. On November 20, 2020, the Company also increased the number of shares of preferred stock and common stock authorized for issuance (see Note 5).

Liquidity and Capital Resources

The Company has incurred operating losses since inception and expects to continue to incur significant operating losses for the foreseeable future and may never become profitable. As of December 31, 2020, the Company had an accumulated deficit of $27.0 million. The Company has relied on raising capital from venture capital firms and private investors and funding from a government grant to finance its operations.

On November 20, 2020, the Company closed on the sale of an aggregate of 17,674,469 shares of Series B convertible preferred stock for gross proceeds of $45.1 million (the “Initial Closing”). Net proceeds from the Initial Closing, after deducting offering expenses, were $44.7 million. Subject to the terms and conditions of the Series B Preferred Stock Purchase Agreement (the “Series B Agreement”), if, after the Initial Closing, the Company achieves the milestone set forth in the Series B Agreement, then, as soon as practicable following the mutual determination by the Board of Directors (“Board”) and the holders of at least 67% of the outstanding Series B convertible preferred stock shares then held by the Series B purchasers (the “Requisite Investors”) that the milestone event has occurred or has been waived, the Company shall deliver a written notice to each Series B purchaser stating that the milestone event has been achieved. Notwithstanding the foregoing, at any time after the Initial Closing, the Requisite Investors may elect to waive the achievement of the milestone event and consummate the subsequent closing (the “Milestone Closing”) by delivering a written election to the Company. At the Milestone Closing, the Company will sell an additional 11,782,981 shares of Series B convertible preferred stock at $2.55 per share for gross proceeds of $30.0 million.

As a result of the Initial Closing, management believes that its existing financial resources are sufficient to continue operating activities for at least one year past the issuance date of these financial statements. Future capital requirements will depend upon many factors, including the timing and extent of spending on research and development, the achievement of the milestone event and related Milestone Closing, future receipt of grant revenue and market acceptance of the Company’s products. The Company will need to obtain additional financing in order to complete clinical trials and launch and commercialize any product candidates for which it receives regulatory approval. There can be no assurance that such financing will be available on terms acceptable to the Company, or at all.

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

Liquidity and Capital Resources (continued)

The impact of the coronavirus ("COVID-19") outbreak on the Company's results of operations, financial position and cash flows will depend on future developments, including the duration and spread of the outbreak and related advisories and restrictions. These developments and the impact of COVID-19 on the financial markets and the overall economy are highly uncertain and cannot be predicted. If the financial markets and/or the overall economy are impacted for an extended period, the Company's results of operations, financial position and cash flows may be materially adversely affected.

NOTE 2. BASIS OF PRESENTATION, SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND RECENT ACCOUNTING PRONOUNCEMENTS

Basis of Presentation

The accompanying financial statements have been prepared in accordance with Generally Accepted Accounting Principles in the United States of America ("U.S. GAAP") as determined by the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC").

Emerging Growth Company

From time to time, new accounting pronouncements are issued by the FASB, or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the impact of recently issued standards that are not yet effective will not have a material impact on the Company's financial statements upon adoption. Under the Jumpstart Our Business Startups Act of 2012, as amended, the Company meets the definition of an emerging growth company and has elected the extended transition period for complying with new or revised accounting standards, which delays the adoption of these accounting standards until they would apply to private companies.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. These estimates and assumptions are based on current facts and historical experience, as well as other pertinent industry and regulatory authority information, including the potential future effects of COVID-19, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Actual results may differ materially and adversely from these estimates. To the extent there are material differences between the estimates and actual results, the Company's future results of operations will be affected.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents. The Company's cash equivalents consist of funds held in a money market account. The Company had $4.2 million and $36.8 million in cash equivalents as of December 31, 2019 and 2020, respectively.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentration of credit risk consist primarily of cash and cash equivalents. Periodically, the Company may maintain deposits in financial institutions

in excess of government insured limits. Management believes that the Company is not exposed to significant credit risk as the Company's deposits are held at financial institutions that management believes to be of high credit quality. The Company has not experienced any losses on these deposits.

Fair Value of Financial Instruments

The Company's financial assets and liabilities are accounted for in accordance with ASC 820, *Fair Value Measurements and Disclosures* which defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The fair value hierarchy requires an entity to maximize the use of observable inputs when measuring fair value and classifies those inputs into three levels:

Level 1—Observable inputs, such as quoted prices in active markets for identical assets or liabilities.

Level 2—Inputs other than Level 1 inputs that are either directly or indirectly observable, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the instrument's anticipated life.

Level 3—Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

To the extent the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair values requires more judgement. Accordingly, the degree of judgement exercised by management in determining fair value is greatest for instruments categorized as Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

The following tables present the Company's fair value hierarchy for its money market securities, preferred stock tranche rights liability and preferred stock warrant liability measured at fair value on a recurring basis at December 31, 2019 and 2020 (in thousands):

	Fair Value Measured at December 31, 2019			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Fair Value at December 31, 2019
Assets included in:				
Cash and cash equivalents				
Money market securities	$ 4,207	$ —	$ —	$ 4,207
Total fair value	$ 4,207	$ —	$ —	$ 4,207
Liabilities included in:				
Preferred stock warrant liability	$ —	$ —	$ 577	$ 577
Total fair value	$ —	$ —	$ 577	$ 577

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

	Fair Value Measured at December 31, 2020			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Fair Value at December 31, 2020
Assets included in:				
Cash and cash equivalents				
Money market securities	$ 36,758	$ —	$ —	$ 36,758
Total fair value	$ 36,758	$ —	$ —	$ 36,758
Liabilities included in:				
Preferred stock tranche rights liability	$ —	$ —	$ 5,033	$ 5,033
Preferred stock warrant liability	—	—	380	380
Total fair value	$ —	$ —	$ 5,413	$ 5,413

The carrying values reported in the Company's balance sheet for cash and cash equivalents, accounts payable, and accrued expenses are reasonable estimates of their fair values due to the short-term nature of these items.

Refer to Note 4 for further information about the Level 3 rollforward of activity and Level 3 inputs.

Grant Receivable

Grant receivable consists of research expenses reimbursable under a grant from the National Institute of Health ("NIH"). The Company carries its grant receivable at the unreimbursed amount. On a periodic basis, the Company evaluates its grant receivable to determine whether an allowance is required. The allowance is management's best estimate of probable losses. Management determined that no allowance was necessary as of December 31, 2019 and 2020.

Convertible Preferred Stock

The Company records shares of convertible preferred stock at their respective fair values on the dates of issuance, net of issuance costs. The Company has applied the guidance in ASC 480-10-S99-3A, *SEC Staff Announcement: Classification and Measurement of Redeemable Securities* and has therefore classified the Series A, Series A-1 and Series B convertible preferred stock as mezzanine equity. The convertible preferred stock is recorded outside of stockholders' deficit because, in the event of certain deemed liquidation events considered not solely within the Company's control, such as a merger, acquisition and sale of all or substantially all of the Company's assets (a "Deemed Liquidation Event"), the convertible preferred stock will become redeemable at the option of the holders. In the event of a change of control of the Company, proceeds received from the sale of such shares will be distributed in accordance with the corresponding liquidation preferences. The Company did not adjust the carrying values of the convertible preferred stock to the deemed liquidation values of such shares since a liquidation event was not probable at any of the reporting dates. Subsequent adjustments to increase or decrease the carrying values to the ultimate liquidation values will be made only if and when it becomes probable that such a liquidation event will occur.

Preferred Stock Tranche Rights Liability

The Company has determined that its obligation to issue, and the Company's investors' right to purchase, additional shares of Series B convertible preferred stock pursuant to the Milestone Closing (see Note 4) represents a freestanding financial instrument (the "tranche liability"). The tranche liability was initially recorded

at fair value. The proceeds from the sale of the convertible preferred stock are first allocated to the fair value of the tranche liability with the remaining proceeds from the sale of the convertible preferred stock allocated to the Series B convertible preferred stock. The tranche liability is remeasured at each reporting period and upon the exercise or expiration of the obligation, with gains and losses arising from subsequent changes in its fair value recognized in other income and expense in the statement of operations. At the time of the exercise or expiration of the tranche liability, any remaining value of the tranche liability will be reclassified to convertible preferred stock on the balance sheet.

Preferred Stock Warrant Liability

The Company accounts for the warrant to purchase Series A-1 convertible preferred stock as a liability as this warrant is a freestanding financial instrument that may require the Company to transfer assets upon exercise. The warrant liability was initially recorded at fair value. The warrant liability is remeasured at each reporting period until the earlier of the exercise or expiration of the applicable warrant, with gains and losses arising from subsequent changes in its fair value recognized in other income and expense in the statement of operations. At the time of the exercise or expiration of the warrant liability, any remaining value of the warrant liability will be reclassified to convertible preferred stock on the balance sheet.

Common Stock Warrants

The Company assesses whether warrants issued require accounting as derivatives. The Company determined that the warrants were (1) indexed to the Company's own stock and (2) classified in stockholders' equity in accordance with FASB ASC Topic 815, *Derivatives and Hedging*. As such the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders' equity.

Grant and Other Revenue Recognition

The Company's NIH grant is not within the scope of ASC 606, *Revenue from Contracts with Customers,* as the grant does not meet the definition of a contract with a customer. The Company has concluded that the grant meets the definition of a contribution and is a non-reciprocal transaction, and management has also concluded that Subtopic 958-605, *Not-for-Profit-Entities-Revenue Recognition* does not apply, as Acumen is a business entity and the grant is with a governmental agency.

In the absence of applicable guidance under U.S. GAAP, the Company's policy is to recognize grant revenue when the related costs are incurred and the right to payment is realized. Costs incurred are recorded in research and development and general and administrative expenses on the accompanying statements of operations

The Company believes the recognition of revenue as costs are incurred and amounts become realizable is analogous to the concept of transfer of control of a service over time under ASC 606.

Research and Development Expenses

Research and development expenses primarily consist of consultants and materials, biologic storage, salaries and other personnel-related expenses related to research and development activities and are expensed as incurred. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected on the balance sheet as prepaid or accrued expenses. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs.

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

Stock-based Compensation

The Company expenses stock-based compensation to employees, non-employees and board members over the requisite service period based on the estimated grant-date fair value of the awards and actual forfeitures. The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model, which requires the use of a number of complex assumptions including the fair value of the common stock, expected volatility, risk-free interest rate, expected dividends, and the expected term of the option. The assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment. Stock-based awards with graded-vesting schedules are recognized on a straight-line basis over the requisite service period for each separately vesting portion of the award. All stock-based compensation costs are recorded in research and development expense or general and administrative expense in the statements of operations based upon the respective employee's or non-employee's roles within the Company. Forfeitures are recorded as they occur. See also Note 6 below.

Income Taxes

Income taxes are recorded in accordance with ASC 740, *Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse, and net operating loss ("NOL") carryforwards and research and development tax credit ("R&D Credit") carryforwards. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The Company has recorded a full valuation allowance to reduce its net deferred income tax assets to zero. In the event the Company were to determine that it would be able to realize some or all its deferred income tax assets in the future, an adjustment to the deferred income tax asset valuation allowance would increase income in the period such determination was made.

The Company accounts for uncertain tax positions in accordance with the provisions of ASC 740. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit would more likely than not be realized assuming examination by the taxing authority. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. There were no uncertain tax positions that require accrual or disclosure in the financial statements as of December 31, 2019 and 2020. The Company's policy is to record interest and penalties, if any, as part of income tax benefit. No interest or penalties were recorded for the years ended December 31, 2019 and 2020.

Net Loss Per Share of Common Stock

Basic net loss per share of common stock is calculated using the two-class method under which earnings are allocated to both common shares and participating securities based on their participation rights. Net loss attributable to common stockholders is not allocated to the convertible preferred stock as the holders of the convertible preferred stock do not have a contractual obligation to share in any losses. Basic net loss per share is calculated by dividing the net loss attributable to common shares by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share of common stock is computed by dividing the net loss using the weighted-average number of shares of common shares and, if dilutive, potential common shares outstanding during the period. Potential common shares consist of stock options and warrants to purchase common stock (using the treasury stock method), and the conversion of convertible preferred stock and the preferred warrant (using the if-converted method). See Note 9 below.

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

Segment information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one segment.

Recently Adopted Accounting Pronouncements

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement.* This new guidance removes certain disclosure requirements related to the fair value hierarchy, modifies existing disclosure requirements related to measurement uncertainty and adds new disclosure requirements. The new disclosure requirements include disclosing the changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period and the range and weighted-average of significant unobservable inputs used to develop Level 3 fair value measurements. This new guidance was effective for the Company beginning on January 1, 2020 and did not have a material impact on the Company's financial statements.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, as amended, with guidance regarding the accounting for and disclosure of leases. This update requires lessees to recognize the liabilities related to all leases, including operating leases, with a term greater than 12 months on the balance sheet. This update also requires lessees and lessors to disclose key information about their leasing transactions. This guidance will become effective for the Company for annual reporting periods beginning after December 15, 2021 and interim periods within fiscal years beginning after December 15, 2022. The adoption of Topic 842 is not expected to have a material impact on the financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in ASC 740 and also clarifies and amends existing guidance to improve consistent application. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020, with early adoption permitted. The Company is currently evaluating the impact of this standard on its financial statements.

NOTE 3. SUPPLEMENTAL FINANCIAL INFORMATION

Prepaid expenses and other current assets consisted of the following (in thousands):

	December 31,	
	2019	2020
Service agreements	$540	$432
Prepaid raw materials	49	91
Other	7	20
Total prepaid expenses and other current assets	$596	$543

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

Accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31, 2019	December 31, 2020
Research and development	$505	$133
Professional fees	—	200
Other	37	90
Total accrued expenses and other current liabilities	$542	$423

NOTE 4. CONVERTIBLE PREFERRED STOCK, TRANCHE RIGHTS LIABILITY AND WARRANT LIABILITY

Convertible Preferred Stock

At December 31, 2019 and 2020, convertible preferred stock consisted of the following (in thousands, except share and per share data):

	December 31, 2019				
	Shares Authorized	Shares Issued and Outstanding	Issuance Price per Share	Carrying Value	Liquidation Preference
Series A	802,972	711,203	$ 1.50	$ 1,067	$ 1,067
Series A-1	12,710,059	11,231,511	1.50	16,333	16,847
Total	13,513,031	11,942,714		$ 17,400	$ 17,914

	December 31, 2020				
	Shares Authorized	Shares Issued and Outstanding	Issuance Price per Share	Carrying Value	Liquidation Preference
Series A	711,203	711,203	$ 1.50	$ 1,067	$ 1,067
Series A-1	11,898,177	11,231,511	1.50	16,333	16,847
Series B	29,457,450	17,674,469	2.55	39,253	45,070
Total	42,066,830	29,617,183		$ 56,653	$ 62,984

On November 20, 2020, the Company entered into the Series B Agreement for a private placement of up to 29,457,450 shares of Series B convertible preferred stock, $0.0001 par value per share, at an original issuance price of $2.55 per share, subject to separate closings, including: (1) 17,674,469 shares at the Initial Closing on November 20, 2020, and (2) 11,782,981 shares at a subsequent closing that would be triggered by the achievement of a specific clinical milestone. The Series B Agreement obligates the Company to issue and sell and the Series B purchasers to purchase up to a total of 11,782,981 additional shares of Series B convertible preferred stock (the “Milestone Shares”) at the same price per share upon the achievement of a certain defined clinical milestone. The determination as to whether the milestone event has been met is subject to certification by the Board and the Requisite Investors. Each Series B convertible preferred stock investor has the right, but not the obligation, to purchase all or any portion of the Milestone Shares at any time in its sole option and in its sole and absolute discretion, whether or not the Company achieves the applicable clinical milestone. However, in the event that the Milestone Closing occurs, if any Series B purchaser fails to purchase its respective portion of the Milestone Shares, each existing share of Series B convertible preferred stock held by such stockholder will automatically convert into one share of common stock. See “*Series B Convertible Preferred Stock Tranche Rights Liability*” below).

ACUMEN PHARMACEUTICALS, INC.
NOTES TO FINANCIAL STATEMENTS

On October 19, 2018, the Company entered into the Series A-1 and Series A Preferred Stock Purchase and Exchange Agreements (the "Series A-1 and Series A Agreements"). Under the Series A-1 and Series A Agreements, the Company sold 5,442,867 shares of Series A-1 convertible preferred stock, $0.0001 par value per share, at a purchase price of $1.50 per share for gross proceeds of $8.2 million. Convertible notes issued in 2018 including accrued interest thereon totaling $275,000, were converted into 183,333 shares of Series A-1 convertible preferred stock and convertible notes issued in 2014 through 2017 including accrued interest thereon, totaling $3.1 million were converted into 2,043,757 shares of Series A convertible preferred stock, $0.0001 par value per share, in each case at a conversion rate of $1.50 per share. Additionally, the holders of Series A convertible preferred stock and the holders of common stock were given the option to exchange their respective shares into shares of Series A-1 convertible preferred stock and Series A convertible preferred stock, respectively, on a one-to-one basis. A total of 1,333,449 shares of Series A convertible preferred stock were exchanged for Series A-1 convertible preferred stock and a total of 64,060 shares of common stock were exchanged for Series A convertible preferred stock. The difference between the book value of the common shares and the issuance price of the Series A convertible preferred shares for which they were exchanged was recorded as a contribution in the statement of stockholders' deficit. On October 19, 2018, the Company also issued a warrant to purchase 666,666 shares of Series A-1 convertible preferred stock at an exercise price of $1.875. This warrant has a term of 10 years and an aggregate grant date fair value of $430,000 (see *"Series A-1 Convertible Preferred Stock Warrant Liability" below*).

During 2019, the Company sold an additional 4,157,198 shares of Series A-1 convertible preferred stock at a purchase price of $1.50 per share for gross proceeds of $6.2 million. Additionally, a total of 114,664 shares of Series A convertible preferred stock were exchanged for Series A-1 convertible preferred stock and a total of 51,515 shares of common stock were exchanged for Series A convertible preferred stock. The exchange of Series A convertible preferred stock for Series A-1 convertible preferred stock was accounted for on a prospective basis as the exchange was not considered to be a significant modification, and the Company reclassified $1.50 per share from Series A convertible preferred stock to Series A-1 convertible preferred stock. The exchange of common stock for Series A convertible stock was accounted for as an extinguishment as the exchange was considered to be a significant modification, and the common shares were retired by the Company at the common shares' book value, with the difference between that and the Series A convertible preferred stock issuance price of $1.50 per share recorded as a contribution in the statement of stockholders' deficit.

Dividends

The holders of Series B, Series A-1 and Series A convertible preferred stock are entitled to receive dividends ahead of, or simultaneously with, common stockholders in an amount equal to the product of (A) the dividend payable on each share of the class or series of convertible preferred stock determined, if applicable, as if all shares of such class or series of convertible preferred stock had been converted into common stock and (B) the number of shares of common stock issuable upon conversion of a share of preferred stock. No dividends have been declared since inception.

Liquidation preference

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, holders of Series B convertible preferred stock are entitled to receive, prior and in preference to, holders of Series A-1 convertible preferred stock, Series A convertible preferred stock, and holders of common stock, in the amount of the original issue price plus any declared but unpaid dividends thereon. If upon occurrence of such an event, the assets and funds to be distributed among the holders of Series B convertible preferred stock are insufficient to permit full payment to such holders, the entire assets and funds of the Company legally available for distribution will be distributed ratably among the holders of the Series B convertible preferred stock.

ACUMEN PHARMACEUTICALS, INC.
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In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, holders of Series A-1 convertible preferred stock are entitled to receive, prior and in preference to, holders of Series A convertible preferred stock and holders of common stock, in the amount of the original issue price plus any declared but unpaid dividends thereon. If upon occurrence of such an event, the assets and funds to be distributed among the holders of Series A-1 convertible preferred stock are insufficient to permit full payment to such holders, the entire assets and funds of the Company legally available for distribution will be distributed ratably among the holders of the Series A-1 convertible preferred stock.

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, holders of Series A convertible preferred stock are entitled to receive, prior and in preference to, holders of common stock, in the amount of the original issue price plus any declared but unpaid dividends thereon. If upon occurrence of such an event, the assets and funds to be distributed among the holders of Series A convertible preferred stock are insufficient to permit full payment to such holders, the entire assets and funds of the Company legally available for distribution will be distributed ratably among the holders of the Series A convertible preferred stock.

Conversion rights

Shares of all series of convertible preferred stock are convertible into such number of fully paid and non-assessable shares of common stock as determined by dividing the original issuance price for such series by the applicable conversion price for such series then in effect. The initial conversion price per share for each series of convertible preferred stock is the original issue price applicable to such series as shown in the table above, subject to adjustment in the event of certain dilutive issuances. The convertible preferred stock original issuance price and conversion price are each subject to adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the convertible preferred stock.

Each share of convertible preferred stock is convertible at any time at the option of the holder at the conversion ratio then in effect. In addition, each share of convertible preferred stock will be automatically converted into common stock at the conversion ratio then in effect upon either (a) the closing of an underwritten public offering resulting in gross proceeds to the Company of at least $75 million and at a price per share equal to at least two times the Series B convertible preferred stock original issuance price, or $5.10 (subject to adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B convertible preferred stock), or (b) the date and time, or the occurrence of an event, specified in such vote or written consent of at least 67% of the holders of the then outstanding shares of Series B convertible preferred stock.

Two days after the closing for the Milestone Shares occurs, if ever, each share of Series B convertible preferred stock held by a purchaser that fails to purchase its applicable Milestone Shares shall be automatically converted into one fully-paid, non-assessable share of common stock.

Voting rights

Holders of convertible preferred stock are entitled to vote as a single class together with the holders of common stock and have one vote for each share of common stock into which the convertible preferred stock is convertible.

The holders of Series B convertible preferred stock are entitled to elect two directors to the Board, and the holders of Series A and Series A-1 convertible preferred stock, voting together as a single class, are also entitled to elect two directors to the Board. The holders of common stock, exclusively and as a separate class, are entitled

to elect two directors to the Board. The final director to the Board is designated by the holders of a majority of the shares of the preferred stock and common stock, voting together as a single class.

A majority of the outstanding shares of convertible preferred stock is necessary for approving certain matters, including the ability to either increase or decrease the authorized number of directors constituting the Board, pursuant to protective provisions in the Company's amended and restated certificate of incorporation.

Series B Convertible Preferred Stock Tranche Rights Liability

The Company concluded that the tranche liability met the definition of a freestanding financial instrument, as it was legally detachable and separately exercisable from the initial closing of the Series B convertible preferred stock.

The estimated fair value of the tranche liability was determined using the option pricing method ("OPM") backsolve approach, which was calculated based on the aggregate equity value of the Company derived from the Series B convertible preferred stock offering price of $2.55 per share at the initial issuance date. As of November 20, 2020, the estimated fair value of the tranche liability was $5,422,000. The initial valuation also considered, in part, the following subjective assumptions: risk-free rate of 0.16%, an expected volatility of 90%, the expected term to a liquidity event of 2.1 years, and a 70% probability of achieving the milestone event, or Milestone Closing. At December 31, 2020, the estimated fair value of the tranche liability was $5,033,000 and was again determined using the OPM backsolve method, which was calculated based on the aggregate equity value of the Company derived from the Series B convertible preferred stock offering price of $2.55 per share. The subsequent remeasurement also considered, in part, a risk-free rate of 0.13%, an expected volatility of 90%, the expected term to a liquidity event of 2.0 years, and a 65% probability of achieving the Milestone Closing. The resulting difference of $389,000 has been recognized as a change in fair value within other income in the accompanying statements of operations. The tranche liability will be revalued each reporting period with the change in fair value recorded in the accompanying statements of operations until the Milestone Shares are issued, or it becomes apparent that the milestone event will not be achieved and the Milestone Shares will never be issued.

Series A-1 Convertible Preferred Stock Warrant Liability

On October 19, 2018, the Company issued a 10-year warrant (the "Series A-1 Warrant") to purchase up to an aggregate of 666,666 shares of Series A-1 convertible preferred stock at an exercise price of $1.875 on or before October 18, 2028. The Series A-1 Warrant was issued in connection with the Series A-1 and Series A Agreements. As of December 31, 2019 and 2020, this Series A-1 Warrant remained outstanding.

The warrant liability met the definition of a freestanding financial instrument, as it was legally detachable and separately exercisable from the initial closing of the Series A-1 convertible preferred stock. As such, it is revalued each reporting period with the change in fair value recorded in the accompanying statements of operations until the warrant is exercised or expires.

The fair value of the warrant liability was estimated using the OPM backsolve method using the following assumptions:

	December 31,	
	2019	2020
Risk-free interest rate	1.66%	0.13%
Expected term (in years)	4.0	2.0
Expected volatility	90%	90%
Expected dividend yield	0%	0%

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The following table provides a reconciliation of the tranche liability and warrant liability measured at fair value using Level 3 significant unobservable inputs (in thousands):

	Series A-1 Preferred Stock Warrant	Series B Tranche Rights	Total
Balance, January 1, 2019	$ 430	$ —	$ 430
Change in fair value	147	—	147
Balance, December 31, 2019	577	—	577
Fair value at issuance of Series B convertible preferred stock (November 2020)	—	5,422	5,422
Change in fair value	(197)	(389)	(586)
Balance, December 31, 2020	$ 380	$ 5,033	$5,413

NOTE 5. STOCKHOLDERS' DEFICIT

Authorized Shares

The Company amended its certificate of incorporation on November 20, 2020, such that the total number of shares of common stock authorized to be issued was increased to 50,500,000, and the total number of shares of preferred stock authorized to be issued was increased to 42,066,830, of which 711,203 are designated Series A convertible preferred stock, 11,898,177 are designated as Series A-1 convertible preferred stock and 29,457,450 are designated as Series B convertible preferred stock. The certificate of incorporation was also amended for the reverse stock split that became effective on November 20, 2020 (see Note 1).

Common Stock

As of December 31, 2020, the Company's Amended and Restated Certificate of Incorporation authorized the issuance of 50,500,000 shares of common stock, $0.0001 par value per share. Each share of common stock is entitled to one voting right. The holders of common stock are entitled to elect two directors to the Board. Holders of common stock, voting together as a single class with the holders of preferred stock, may also designate an additional director to the Board. Common stock owners are entitled to dividends when funds are legally available and declared by the Board.

Common Stock Warrants

As of December 31, 2019 and 2020, the outstanding warrants to purchase the Company's common stock were comprised of the following:

	Equity Upon Exercise	Exercise Price	Expiration Dates	December 31, 2019	December 31, 2020
Warrants issued in 2014	Common Stock	$ 3.00	3/21/2024 - 6/30/2025	124,777	124,777
Warrants issued in 2015	Common Stock	$ 3.00	6/30/2025	312,485	312,485
Warrants issued in 2016	Common Stock	$ 3.00	6/30/2025	51,252	51,252
Warrants issued in 2017	Common Stock	$ 3.00	6/30/2025	86,246	86,246
Total Warrants				574,760	574,760

ACUMEN PHARMACEUTICALS, INC.
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NOTE 6. STOCK-BASED COMPENSATION

On April 8, 2013, the Board and stockholders adopted the Company's Amended and Restated Stock Performance Plan (as amended from time to time, most recently on November 20, 2020, the "Plan"). The Plan provides for the grant of incentive stock options, non-statutory stock options, issuance of shares of restricted stock and other equity awards to the Company's employees, officers, directors, consultants and advisors. As of December 31, 2020, the aggregate number of shares authorized for issuance under the Plan totaled 6,227,011 and there were 4,688,586 shares available for future grants.

The Black-Scholes option-pricing model was used to estimate the fair value of stock options with the following weighted average assumptions for the year ended December 31, 2019:

Risk-free interest rate	1.9% - 2.6%
Expected term in years	5.4 - 5.8
Expected volatility	85%
Expected dividend yield	0%

The fair value of the Company's common stock underlying the stock options has historically been determined by the Board with assistance from management and, occasionally with input from an independent third-party valuation firm. For the years ended December 31, 2019 and 2020, management engaged an independent third-party valuation firm to provide an estimate of the fair value of its common stock. The fair value of common stock was determined considering a number of objective and subjective factors, including valuations of comparable companies, sales of convertible preferred stock, operating and financial performance, the lack of liquidity of the Company's common stock and the general and industry-specific economic outlook.

As of December 31, 2019 and 2020, management, with the assistance of independent third-party valuation firms, estimated the fair value of a share of common stock to be $0.56 and $0.56, respectively. The range of assumptions used in these valuations were:

Risk-free interest rate	0.1% - 2.5%
Expected time to liquidity event in years	2.0 - 4.0
Expected volatility	85% - 90%
Expected dividend yield	0%

The stock options granted after December 31, 2017 vest monthly over 24 or 36 months and have a ten-year contractual term. Stock options granted prior to December 31, 2017 were either fully vested upon grant or generally vested monthly over a range of three to 24 months and have a ten-year term. The Company lacks company-specific historical and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies. Due to the lack of historical exercise history, the expected term of the Company's stock options has been determined using the "simplified" method for awards. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is zero based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The weighted average grant date fair value of options granted during the year ended December 31, 2019 was $0.34 per share. There were no options granted during the year ended December 31, 2020.

The following table reflects summarized stock option activity during the years ended December 31, 2019 and 2020:

	Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (In thousands)
Outstanding at December 31, 2018	251,802	$ 3.34		
Options granted	1,359,158	0.48		
Options exercised	(9,463)	0.78		
Options forfeited or canceled	(99,954)	2.99		
Options expired	(4,200)	6.00		
Outstanding at December 31, 2019	1,497,343	0.78		
Options expired	(5,040)	6.00		
Outstanding at December 31, 2020	1,492,303	0.76	7.8	$ 107
Vested and exercisable at December 31, 2020	1,075,682	$ 0.87	7.7	$ 74

The intrinsic value of stock options exercised during the year ended December 31, 2019 was $0. As of December 31, 2020, the total unrecognized compensation costs related to unvested stock option awards granted was approximately $136,000, which the Company expects to recognize over a weighted-average period of approximately one year.

The Company recorded stock-based compensation expense in the following expense categories of its statements of operations for the years ended December 31, 2019 and 2020:

	For the Year Ended December 31,	
	2019	2020
General and administrative	$ 115	$ 103
Research and development	59	51
Total stock-based compensation	$ 174	$ 154

NOTE 7. INCOME TAXES

No provision for federal income taxes has been recorded for the years ended December 31, 2019 and 2020. Current income taxes are based upon the year’s income taxable for federal and state tax reporting purposes. Deferred income taxes (benefits) are provided for certain income and expenses, which are recognized in different periods for tax and financial reporting purposes. Deferred tax assets and liabilities are computed for differences between the financial statements and tax bases of assets and liabilities that will result in taxable or deductible amounts in the future based on enacted tax laws and rates applicable to the period in which the differences are expected to affect taxable income, and net operating loss (“NOL”) carryforwards and research and development (“R&D”) tax credit carryforwards.

ACUMEN PHARMACEUTICALS, INC.
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A reconciliation of the expected tax computed at the U.S. statutory federal income tax rate to the total benefit for income taxes for the years ended December 31, 2019 and 2020 is as follows:

	For the Year Ended December 31,	
	2019	2020
Statutory federal income tax rate	21.0%	21.0%
State tax, net of federal benefit	4.6%	5.1%
Non-deductible expense	(0.4)%	1.7%
R&D credit	5.3%	4.1%
Change in valuation allowance	(30.5)%	(31.9)%
Income tax provision (benefit)	0.0%	0.0%

Significant components of the Company's deferred tax assets as of December 31, 2019 and 2020 were as follows (in thousands):

	December 31,	
	2019	2020
Deferred tax assets:		
Net operating loss	$ 4,358	$ 6,354
R&D credit	1,381	1,681
Stock compensation	45	85
Total deferred tax assets	5,784	8,120
Valuation allowance	(5,784)	(8,120)
Deferred tax assets, net of allowance	$ —	$ —

In assessing the realizability of deferred tax assets as of December 31, 2019 and 2020, management considered whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible or the NOL carryforwards and R&D tax credit carryforwards will be used. The Company has determined that it is not more likely than not that its deferred tax assets will be realized. Accordingly, a valuation allowance has been recorded as of December 31, 2019 and 2020, to fully offset the net deferred tax assets of $5.8 million and $8.1 million, respectively. The change in the valuation allowance from December 31, 2019 to December 31, 2020 is due to the current year pretax loss incurred.

As of December 31, 2020, the Company had approximately $22.3 million of NOL carryforwards available for federal tax purposes which begin to expire on December 31, 2028. As a result of the Tax Act of 2017, for U.S. income tax purposes, NOLs generated prior to December 31, 2017 can still be carried forward for up to 20 years, but NOLs generated after December 31, 2017 carryforward indefinitely, but are limited to 80% utilization against taxable income. Of the total federal NOL of $22.3 million, $6.4 million will begin to expire in 2028 and $15.9 million will not expire but will only offset 80% of future taxable income. The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"), signed into law on March 27, 2020, provided that NOLs generated in a taxable year beginning in 2018, 2019, or 2020, may now be carried back five years and forward indefinitely. In addition, the 80% taxable income limitation is temporarily removed, allowing NOLs to fully offset net taxable income.

As of December 31, 2020, the Company also had a combined total of approximately $31.0 million of state NOL carryforwards. The state NOLs begin to expire on December 31, 2028.

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NOTES TO FINANCIAL STATEMENTS

As of December 31, 2020, the Company had approximately $1.7 million of R&D credit carryforwards available for federal tax purposes, which begin to expire on December 31, 2023.

NOL carryforwards and R&D carryforwards may be subject to a substantial annual limitation due to ownership change limitations that may have occurred or that could occur in the future, as required by Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), as well as similar state and foreign provisions. These ownership changes may limit the amount of NOL and R&D credit carryforwards that can be used annually to offset future taxable income and tax, respectively. In general, an "ownership change" as defined by Section 382 of the Code results from a transaction or series of transactions over a three-year period resulting in an ownership change of more than 50% of the outstanding stock of a company by certain stockholders. The Company has not completed a study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since the Company's formation due to the complexity and cost associated with such study, and the fact that there may be additional such ownership changes in the future.

The Company conducts intensive research and experimentation activities, generating R&D tax credits for federal and state purposes under section 41 of the Code. The Company has not performed a formal study validating these credits claimed in the tax returns. Once a study is prepared, the amount of R&D tax credits available could vary from what was originally claimed on the tax returns.

The Company is subject to U.S. federal and various state taxes. Generally, the tax years remain open for examination by the federal statute under a three-year statute of limitation; however, states generally keep their statutes open for four years. However, the Company's tax years from 2003 and after are subject to examination by the United States and state taxing authorities due to the carry forward of unused NOLs and R&D credits.

NOTE 8. COMMITMENTS AND CONTINGENCIES

The Company is not a party to any material legal proceedings and is not aware of any pending or threatened claims. From time to time, the Company may be subject to various legal proceedings and claims that arise in the ordinary course of its business activities.

NOTE 9. NET LOSS PER SHARE

The Company computes loss per common share of the common stock using the two-class method required for participating securities. Basic and diluted loss per share was the same for each period presented as the inclusion of all potential common stock outstanding would have been anti-dilutive.

The table below provides potentially dilutive securities not included in the calculation of the diluted net loss per common share because to do so would be anti-dilutive:

	For the Year Ended December 31,	
	2019	2020
Shares issuable upon conversion of Series A Preferred Stock	711,203	711,203
Shares issuable upon conversion of Series A-1 Preferred Stock	11,231,511	11,231,511
Shares issuable upon conversion of Series B Preferred Stock	—	17,674,469
Shares issuable upon exercise of stock options	1,497,343	1,492,303
Shares issuable upon exercise of common stock warrants	574,760	574,760
Shares issuable upon exercise of preferred stock warrant	666,666	666,666
Total	14,681,483	32,350,912

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NOTE 10. SUBSEQUENT EVENTS

The Company has completed an evaluation of all subsequent events through April 9, 2021 to ensure that these financial statements include appropriate disclosure of events both recognized in the financial statements and events which occurred but were not recognized in the financial statements. Except as described below, the Company has concluded that no subsequent event has occurred that requires disclosure.

Equity Incentive Plan

On January 4, 2021, options to purchase 3,694,711 shares of common stock under the Plan were awarded to certain employees, directors, advisors and consultants of the Company with an exercise price per share of $0.80. The January 4, 2021 option grants have a ten-year term and nearly all of the award vest monthly over a four-year period after a one-year cliff.

Lease

The Company has been subleasing space in Indiana since March 1, 2020 under a lease that expired on December 31, 2020. The Company executed a new sublease for this space that was effective February 1, 2021. The term of the sublease is for 31 months, expiring on August 30, 2023. The Company will pay monthly rent of $12,719 and is also allowing others to sublease a portion of the space from the Company for less than a one-year period.

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Through and including , 2021 (the 25th day after the commencement of this offering), all dealers that buy, sell or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

Shares

Common Stock

BofA Securities

Credit Suisse

Stifel

UBS Investment Bank

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimated except the Securities and Exchange Commission, or SEC, registration fee, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq Global Market initial listing fee.

	Amount
SEC registration fee	$ *
FINRA filing fee	*
Nasdaq Global Market initial listing fee	*
Accountants' fees and expenses	*
Legal fees and expenses	*
Blue sky fees and expenses	*
Transfer agent's fees and expenses	*
Printing and engraving expenses	*
Miscellaneous	*
Total expenses	$ *

* To be provided by amendment

Item 14. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

As permitted by the Delaware General Corporation Law, our amended and restated certificate of incorporation and bylaws to be in effect upon the closing of this offering will provide that: (i) we are required to indemnify our directors to the fullest extent permitted by the Delaware General Corporation Law; (ii) we may, in our discretion, indemnify our officers, employees and agents as set forth in the Delaware General Corporation Law;

(iii) we are required, upon satisfaction of certain conditions, to advance all expenses incurred by our directors in connection with certain legal proceedings; (iv) the rights conferred in the bylaws are not exclusive; and (v) we are authorized to enter into indemnification agreements with our directors, officers, employees and agents.

In connection with this offering, we expect to enter into indemnification agreements with each of our directors and executive officers that require us to indemnify them against expenses, judgments, fines, settlements and other amounts that any such person becomes legally obligated to pay (including with respect to a derivative action) in connection with any proceeding, whether actual or threatened, to which such person may be made a party by reason of the fact that such person is or was a director or officer of us or any of our affiliates, provided such person acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, our best interests. The indemnification agreements will also set forth certain procedures that will apply in the event of a claim for indemnification thereunder. We intend to enter into similar indemnification agreements with our executive officers prior to the completion of this offering. At present, no litigation or proceeding is pending that involves any of our directors or officers regarding which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

We maintain a directors' and officers' liability insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses us for those losses for which we have lawfully indemnified the directors and officers. The policy contains various exclusions.

In addition, the underwriting agreement filed as Exhibit 1.1 to this Registration Statement provides for indemnification by the underwriters of us and our officers and directors for certain liabilities arising under the Securities Act, or otherwise. Our amended and restated investor rights agreement with certain investors also provides for cross-indemnification in connection with the registration of our common stock on behalf of such investors.

Item 15. Recent Sales of Unregistered Securities.

The following list sets forth information regarding all unregistered securities sold by us since January 2018 through the date of the prospectus that forms a part of this registration statement. None of the following transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Unless otherwise specified above, we believe these transactions were exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act (and Regulation D promulgated thereunder) or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or under benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed on the share certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Issuances of Common Stock

We have not issued any common stock since January 2018.

Issuances of Convertible Notes

In May 2018, we issued and sold convertible promissory notes to two individual and institutional accredited investors, pursuant to which we issued and sold $250,000 aggregate principal amount of convertible promissory notes in exchange for $250,000 in gross proceeds.

Issuances of Preferred Stock

In October 2018 with subsequent closings through November 2019, we issued 2,159,332 shares of our Series A convertible preferred stock and 11,231,512 shares of our Series A-1 convertible preferred stock to 46 individual and institutional accredited investors. Of these shares, we sold an aggregate of 9,600,066 shares of our Series A-1 convertible preferred stock for $1.50 per share, for aggregate consideration of $14.4 million. The remaining shares were issued as conversions of notes and shares of common stock into shares of Series A convertible preferred stock and conversions of Series A convertible preferred stock into shares of Series A-1 convertible preferred stock.

In November 2020, we issued 17,674,469 shares of our Series B convertible preferred stock to 31 individual and institutional accredited investors for $2.55 per share, for aggregate consideration of $45.1 million.

Issuances of Warrants

In October 2018, we issued a warrant to purchase 666,666 shares of our Series A-1 preferred stock, with a per-share exercise price of $1.875 per share to an accredited institutional investor.

Issuances Pursuant to our Equity Plans

From January 1, 2018 through the date of this registration statement, we granted options under our Amended and Restated Stock Performance Plan to purchase an aggregate of   shares of common stock, at a weighted average exercise price of $ per share, to our employees and consultants. Of these,   shares have been issued upon the exercise of options, and   options have been cancelled. We have also granted no restricted stock awards under our Amended and Restated Stock Performance Plan during the same time period. The recipients of these securities were employees, directors or bona fide consultants of the Registrant and received the securities under the Prior Plan.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits listed below are filed as part of this registration.

Exhibit Number	Description of Exhibit
1.1*	Form of Underwriting Agreement
3.1	Amended and Restated Certificate of Incorporation of the Registrant (as amended and currently in effect)
3.2	Amended and Restated Bylaws of the Registrant (currently in effect)
3.3*	Form of Amended and Restated Certificate of Incorporation of the Registrant (to be effective upon the closing of this offering)
3.4*	Form of Amended and Restated Bylaws of the Registrant (to be effective upon the closing of this offering)
4.1	Amended and Restated Investors' Rights Agreement, by and among the Registrant and certain of its stockholders, dated November 20, 2020
5.1*	Opinion of Cooley LLP
10.1†*	Collaboration Agreement, by and between the Registrant and Merck & Co., Inc., dated December 22, 2003, as amended and restated as of October 18, 2006

Exhibit Number	Description of Exhibit
10.2*	2021 Equity Incentive Plan and Forms of Option Grant Notice and Agreement, Exercise Notice, Early Exercise Notice and Restricted Stock Award Notice
10.3*	2021 Stock Incentive Plan and Forms of Stock Option Grant Notice, Stock Option Agreement, Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement
10.4*	2021 Employee Stock Purchase Plan
10.5*	2013 Amended and Restated Stock Performance Plan
10.6*	Form of Indemnification Agreement with Executive Officers and Directors
10.7	Executive Employment Agreement, by and between the Registrant and Daniel O'Connell
10.8	Employment Agreement by and between the Registrant and Eric Siemers, M.D.
10.9	Employment Agreement by and between the Registrant and Russell Barton
23.1*	Consent of Ernst & Young LLP, independent registered public accounting firm
23.2*	Consent of Cooley LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on signature page)

† Confidential treatment will be requested for portions of this agreement.
* To be filed by amendment.

(b) Financial Statement Schedules.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Charlottesville, Commonwealth of Virginia, on this day of , 2021.

Acumen Pharmaceuticals, Inc.

By: ______________________________
Daniel O'Connell
Chief Executive Officer

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Daniel O'Connell and , and each of them, as his or her true and lawful agents, proxies and attorneys-in-fact, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii) act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and (iv) take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he might or could do in person, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
Daniel O'Connell	Chief Executive Officer and Director *(Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer)*	, 2021
Jeffrey L. Ives, PhD	Director	, 2021
Sean Stalfort	Director	, 2021
Laura Stoppel, PhD	Director	, 2021
Stephen Zachary, PhD	Director	, 2021
Jeffrey Sevigny, M.D.	Director	, 2021

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
ACUMEN PHARMACEUTICALS, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Acumen Pharmaceuticals, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the **"General Corporation Law"),**

DOES HEREBY CERTIFY:

1. That the name of this corporation is Acumen Pharmaceuticals, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on January 4, 1996 under the name "Acumen Pharmaceuticals, Inc.".

2. That the Board of Directors duly adopted resolutions proposing to amend and restate the Certificate of incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

FIRST: The name of this corporation is Acumen Pharmaceuticals, Inc. (the "**Corporation**").

SECOND: The address of the registered office of the Corporation in the State of Delaware is 251 Little Falls Drive, in the City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 50,500,000 shares of Common Stock, $0.0001 par value per share **("Common Stock")** and (ii) 42,066,830 shares of Preferred Stock, $0.0001 par value per share **("Preferred Stock").** Immediately upon the filing of this Amended and Restated Certificate with the Secretary of State of the State of Delaware (the **"Effective Time"),** (i) every 30 shares of Common Stock issued and outstanding immediately prior to the Effective Time shall be combined into one share of Common Stock, (ii) every 30 shares of Series A Preferred Stock issued and outstanding immediately prior to the Effective Time shall be combined into one share of Series A Preferred Stock and (iii) every 30 shares of Series A-1 Preferred Stock issued and outstanding immediately prior to the Effective Time shall be combined into one share of Series A-1 Preferred Stock (the **"Reverse Stock Split"),** in each case automatically and without any action on the part of the respective holders thereof; *provided, however,* that the Corporation shall issue no fractional shares of Common Stock, Series A Preferred Stock or Series A-1 Preferred Stock as a result of the Reverse

Stock Split, but shall instead pay to any stockholder who would be entitled to receive a fractional share as a result of the Reverse Stock Split a sum in cash equal to the fair market value of the shares constituting such fractional share as determined by the Board of Directors of the Corporation. The Reverse Stock Split shall be effected on a certificate-by-certificate basis and shall occur whether or not the certificates representing such shares of Common Stock, Series A Preferred Stock or Series A-1 Preferred Stock are surrendered to the Corporation. No further adjustment of the Series A Conversion Price or Series A-1 Conversion Price, preference, price or right set forth in this Article Fourth shall be made as a result of the Reverse Stock Split, as all share amounts, amounts per share and per share numbers set forth in this Restated Certificate have been appropriately adjusted to reflect the Reverse Stock Split.

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of this Amended and Restated Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

B. PREFERRED STOCK

711,203 shares of the authorized Preferred Stock of the Corporation are hereby designated **"Series A Preferred Stock",** 11,898,177 shares of the authorized Preferred Stock of the Corporation are hereby designated **"Series A-1 Preferred Stock"** and 29,457,450 shares of the authorized and unissued Preferred Stock of the Corporation are hereby designated **"Series B Preferred Stock",** each with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. The Series A Preferred Stock, Series A-1 Preferred Stock and Series B Preferred Stock may collectively be referred to as the **"Preferred Stock".** Unless otherwise indicated, references to "sections" or "subsections" in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

1. Dividends.

The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in this Amended and Restated Certificate of Incorporation) the holders of the Preferred Stock then outstanding shall first receive, or simultaneously receive, a dividend on each outstanding share of Preferred Stock in an amount at least equal to (i) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Preferred Stock as would equal the product of (A) the dividend payable on each share of such class or series determined, if applicable, as if all shares of

such class or series had been converted into Common Stock and (B) the number of shares of Common Stock issuable upon conversion of a share of Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (ii) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Preferred Stock determined by (A) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (B) multiplying such fraction by an amount equal to the Applicable Original Issue Price (as defined below); provided that, if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Preferred Stock dividend. The "**Series A Original Issue Price**" shall mean $1.50 per share of Series A Preferred Stock, the "**Series A-1 Original Issue Price**" shall mean $1.50 per share of Series A-1 Preferred Stock and the "**Series B Original Issue Price**" shall mean $2.55 per share of Series B Preferred Stock, in each case subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such series of Preferred Stock. The Series A Original Issue Price, Series A-1 Original Issue Price and Series B Original Issue Price may be referred to herein, for each series of Preferred Stock, as applicable, as the "**Applicable Original Issue Price**".

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales.

2.1 Preferential Payments to Holders of Series B Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, and in the event of a Deemed Liquidation Event (as defined below), the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the consideration payable to stockholders in such Deemed Liquidation Event or out of the Available Proceeds (as defined below), as applicable, before any payment shall be made to the holders of Common Stock, Series A Preferred Stock or Series A-1 Preferred Stock by reason of their respective ownership thereof, an amount per share equal to the Series B Original Issue Price, plus any dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series B Preferred Stock the full amount to which they shall be entitled under this Section 2.1, the holders of shares of Series B Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.2 Preferential Payments to Holders of Series A-1 Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, after the payment to the holders of Series B Preferred Stock in accordance with Section 2.1, the holders of shares of Series A-1 Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, and in the event of a Deemed Liquidation Event (as defined below), the holders of shares of Series A-1 Preferred Stock then outstanding shall be entitled to be paid out of the consideration payable to stockholders in such Deemed Liquidation Event or out of the Available Proceeds (as defined below), as applicable, before any payment shall be made to the holders of Common Stock or Series A Preferred Stock by reason of their respective ownership thereof, an amount per share equal to the Series A-1 Original Issue Price plus any dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of

the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series A-1 Preferred Stock the full amount to which they shall be entitled under this Section 2.2, the holders of shares of Series A-1 Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.3 Preferential Payments to Holders of Series A Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, after the payment to the holders of Series B Preferred Stock in accordance with Section 2.1 and Series A-1 Preferred Stock in accordance with Section 2.2, the holders of shares of Series A Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, and in the event of a Deemed Liquidation Event (as defined below), the holders of shares of Series A Preferred Stock then outstanding shall be entitled to be paid out of the consideration payable to stockholders in such Deemed Liquidation Event or out of the Available Proceeds (as defined below), as applicable, before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the Series A Original Issue Price, plus any dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series A Preferred Stock the full amount to which they shall be entitled under this Section 2.3, the holders of shares of Series A Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.4 Distribution of Remaining Assets. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, after the payment to the holders of shares of Preferred Stock in accordance with Sections 2.1, 2.2 and 2.3, the remaining assets of the Corporation available for distribution to its stockholders or, in the case of a Deemed Liquidation Event, the consideration not payable to the holders of shares of Preferred Stock pursuant to Sections 2.1, 2.2 and 2.3 or the remaining Available Proceeds, as the case may be, shall be distributed among the holders of the shares of Preferred Stock and Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of this Amended and Restated Certificate of Incorporation immediately prior to such liquidation, dissolution or winding up of the Corporation, provided, however, that (i) if the aggregate amount per share of Series B Preferred Stock which the holders of Series B Preferred Stock would be entitled to receive under Sections 2.1 and 2.4 would exceed two times the Series B Original Issue Price, (ii) if the aggregate amount per share of Series A-1 Preferred Stock which the holders of Series A-1 Preferred Stock would be entitled to receive under Sections 2.2 and 2.4 would exceed two times the Series A-1 Original Issue Price, or (iii) if the aggregate amount per share of Series A Preferred Stock which the holders of Series A Preferred Stock would be entitled to receive under Sections 2.3 and 2.4 would exceed two times the Series A Original Issue Price (as applicable, the **"Maximum Participation Amount"),** then in lieu of receiving such aggregate amount per share of such series of Preferred Stock, each holder of such series of Preferred Stock shall instead be entitled to receive upon such liquidation, dissolution or winding up of the Corporation the greater of (i) the Maximum Participation Amount per share of such series of Preferred Stock or (ii) the amount per share of such series of Preferred Stock such holder would have received if all shares of such series of Preferred Stock had been converted into Common Stock immediately prior to such liquidation, dissolution or winding up of the Corporation. The amount which a holder of shares of a series of Preferred Stock is entitled to receive under Sections 2.1, 2.2, 2.3 and 2.4 is hereinafter referred to, for each such series of Preferred Stock, as the **"Applicable Liquidation Amount".**

2.5 Deemed Liquidation Events.

2.5.1 Definition. Each of the following events shall be considered a **"Deemed Liquidation Event"** unless the holders of at least sixty-seven percent (67%) of the outstanding shares of Series B Preferred Stock (the **"Requisite Holders"),** elect otherwise by written notice sent to the Corporation at least 10 days prior to the effective date of any such event:

(a) a merger or consolidation in which

(i) the Corporation is a constituent party or

(ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, a majority, by voting power, of the capital stock of (l) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(b) (1) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole, or (2) the sale or disposition (whether by merger, consolidation or otherwise, and whether in a single transaction or a series of related transactions) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation.

2.5.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Section 2.5.1(a)(i) unless the agreement or plan of merger or consolidation for such transaction (the **"Merger Agreement")** provides that the consideration payable to the stockholders of the Corporation in such Deemed Liquidation Event shall be paid to the holders of capital stock of the Corporation in accordance with Sections 2.1, 2.2, 2.3 and 2.4.

(b) In the event of a Deemed Liquidation Event referred to in Section 2.5.1(a)(ii) or 2.5.l(b), if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within 90 days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Preferred Stock no later than the 90th day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) to require the redemption of such shares of Preferred Stock, and (ii) if the Requisite Holders so request in a written instrument delivered to the Corporation not later than 120 days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation), together with any other assets of the Corporation

available for distribution to its stockholders, all to the extent permitted by Delaware law governing distributions to stockholders (the "**Available Proceeds**"), on the 150th day after such Deemed Liquidation Event, to redeem all outstanding shares of Preferred Stock at a price per share equal to the Applicable Liquidation Amount. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Available Proceeds are not sufficient to redeem all outstanding shares of Preferred Stock, the Corporation shall redeem a pro rata portion of each holder's shares of Preferred Stock to the fullest extent of such Available Proceeds, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Available Proceeds were sufficient to redeem all such shares, and shall redeem the remaining shares as soon as it may lawfully do so under Delaware law governing distributions to stockholders. Prior to the distribution or redemption provided for in this Section 2.5.2(b), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event or in the ordinary course of business.

2.5.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, exclusive license, other disposition or redemption shall be the cash or the value of the property, rights or securities to be paid or distributed to such holders pursuant to such Deemed Liquidation Event. The value of such property, rights or securities shall be determined in good faith by the Board of Directors of the Corporation.

2.5.4 Allocation of Escrow and Contingent Consideration. In the event of a Deemed Liquidation Event pursuant to Section 2.5.1(a)(i), if any portion of the consideration payable to the stockholders of the Corporation is payable only upon satisfaction of contingencies (the "**Additional Consideration**"), the Merger Agreement shall provide that (a) the portion of such consideration that is not Additional Consideration (such portion, the "**Initial Consideration**") shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 2.1, 2.2, 2.3 and 2.4 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of the Corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 2.1, 2.2, 2.3 and 2.4 after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Section 2.5.4, consideration placed into escrow or retained as a holdback to be available for satisfaction of indemnification or similar obligations in connection with such Deemed Liquidation Event shall be deemed to be Additional Consideration.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of this Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class and on an as-converted to Common Stock basis.

3.2 Election of Directors. The holders of record of the shares of Series B Preferred Stock, voting together as a separate class, shall be entitled to elect two directors of the Corporation (each, a "**Series B Director**"), the holders of record of the shares of Series A Preferred Stock and Series A-1 Preferred Stock, voting together as a single class, shall be entitled to elect two directors of the Corporation

(each, a **"Series A/A-l Director"** and together with the Series B Directors, the **"Preferred Directors")** and the holders of record of the shares of Common Stock, exclusively and as a separate class, shall be entitled to elect two directors of the Corporation (the **"Common Directors");** provided, however, for administrative convenience, the initial Series B Directors may also be appointed by the Board of Directors in connection with the approval of the initial issuance of Preferred Stock without a separate action by the holders of Preferred Stock. Any director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Preferred Stock or Common Stock, as the case may be, fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Section 3.2, then any directorship not so filled shall remain vacant until such time as the holders of Preferred Stock or Common Stock, as the case may be, elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class. The holders of record of the shares of Common Stock and Preferred Stock, exclusively and voting together as a single class, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. Except as otherwise provided in this Section 3.2, a vacancy in any directorship filled by the holders of any class or classes or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or classes or series or by any remaining director or directors elected by the holders of such class or classes or series pursuant to this Section 3.2.

3.3 Preferred Stock Protective Provisions. At any time when shares of Series A-l and Series B Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or this Amended and Restated Certificate of Incorporation) the written consent or affirmative vote of the Requisite Holders given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect:

3.3.1 liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any merger or consolidation or any other Deemed Liquidation Event; or consent to any of the foregoing;

3.3.2 amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws of the Corporation;

3.3.3 create, or authorize the creation of, or issue any additional class or series of capital stock unless the same ranks junior to the Series B Preferred Stock, Series A Preferred Stock and Series A-l Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption, or increase or decrease the authorized number of shares of Series B Preferred Stock, Series A Preferred Stock or Series A-l Preferred Stock or increase or decrease the authorized number of shares of any additional class or series of capital stock of the Corporation unless the same ranks junior to the Series B Preferred Stock, Series A Preferred Stock and Series A-l Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption;

3.3.4 (i) reclassify, alter or amend any existing security of the Corporation that is *pari passu* with the Series B Preferred Stock, Series A Preferred Stock or Series A-l Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to the Series B Preferred Stock, Series A Preferred Stock or Series A-l Preferred Stock in respect of any such right, preference, or privilege or (ii) reclassify, alter or amend any existing security of the Corporation that is junior to the Series B Preferred Stock, Series A Preferred Stock and Series A-l Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to or *pari passu* with the Series B Preferred Stock, Series A Preferred Stock or Series A-l Preferred Stock in respect of any such right, preference or privilege;

3.3.5 purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein, (ii) dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock or (iii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then- current fair market value thereof;

3.3.6 create, or authorize the creation of, or issue, or authorize the issuance of any debt security or create any lien or security interest (except for purchase money liens or statutory liens of landlords, mechanics, materialmen, workmen, warehousemen and other similar persons arising or incurred in the ordinary course of business) or incur other indebtedness for borrowed money, including but not limited to obligations and contingent obligations under guarantees, or permit any subsidiary to take any such action with respect to any debt security lien, security interest or other indebtedness for borrowed money, if the aggregate indebtedness of the Corporation and its subsidiaries for borrowed money following such action would exceed $500,000 other than equipment leases, bank lines of credit or trade payables incurred in the ordinary course unless such debt security has received the prior approval of the Board of Directors, including the approval of a majority of the Preferred Directors;

3.3.7 approve the Corporation’s budget for a fiscal year or make any revision to such approved budget or authorize any expenditure or any commitment to make any expenditure not contemplated by such approved budget, unless approved by the Board of Directors, including the approval of a majority of the Preferred Directors;

3.3.8 create, or hold capital stock in, any subsidiary that is not wholly owned (either directly or through one or more other subsidiaries) by the Corporation, or permit any subsidiary to create, or authorize the creation of, or issue or obligate itself to issue, any shares of any class or series of capital stock, or sell, transfer or otherwise dispose of any capital stock of any direct or indirect subsidiary of the Corporation, or permit any direct or indirect subsidiary to sell, lease, transfer, exclusively license or otherwise dispose (in a single transaction or series of related transactions) of all or substantially all of the assets of such subsidiary;

3.3.9 increase or decrease the authorized number of directors constituting the Board of Directors or change the number of votes entitled to be cast by any director or directors on any matter; or

3.3.10 create, adopt, amend, terminate or repeal any equity (or equity-linked) compensation plan or amend or waive any of the terms of any option or other grants pursuant to any such plan unless such amendment or waiver is approved by the Board of Directors, including the approval of a majority of the Preferred Directors.

3.4 Series A-l Preferred Stock Protective Provisions. At any time when shares of Series A-l Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly, by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or this Amended and Restated Certificate), the written consent or affirmative vote of the holders of a majority of the then outstanding shares of Series A-l Preferred Stock, given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class:

3.4.1 amend, alter or repeal any provision of this Amended and Restated Certificate or Bylaws in a manner that adversely affects the powers, preferences or rights of the Series A-l Preferred Stock in a manner different than any other series of Preferred Stock (it being understood that a series of Preferred Stock shall not be affected differently because of (i) the proportional differences in the amounts of respective issue prices, liquidation preferences and redemption prices that arise out of differences in the original issue price vis-à-vis other series of Preferred Stock or (ii) the creation of a any additional class or series of capital stock that ranks senior to a series of Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption); or

3.4.2 increase or decrease the authorized number of shares of Series A- 1 Preferred Stock.

3.5 Series A Preferred Stock Protective Provisions. At any time when shares of Series A Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly, by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or this Amended and Restated Certificate), the written consent or affirmative vote of the holders of a majority of the then outstanding shares of Series A Preferred Stock, given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class:

3.5.1 amend, alter or repeal any provision of this Amended and Restated Certificate or Bylaws in a manner that adversely affects the powers, preferences or rights of the Series A Preferred Stock in a manner different than any other series of Preferred Stock (it being understood that a series of Preferred Stock shall not be affected differently because of (i) the proportional differences in the amounts of respective issue prices, liquidation preferences and redemption prices that arise out of differences in the original issue price vis-à-vis other series of Preferred Stock or (ii) the creation of a any additional class or series of capital stock that ranks senior to a series of Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption); or

3.5.2 increase or decrease the authorized number of shares of Series A Preferred Stock.

4. Optional Conversion.

The holders of the Preferred Stock shall have conversion rights as follows (the "**Conversion Rights**"):

4.1 Right to Convert.

4.1.1 Conversion Ratio. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing the Applicable Original Issue Price by the Applicable Conversion Price (as defined below) in effect at the time of conversion. The **"Series A Conversion Price"** shall initially be equal to the Series **A** Original Issue Price. The **"Series A-l Conversion Price"** shall initially be equal to the Series A-1 Original Issue Price. The **"Series B Conversion Price"** shall initially be equal to the Series B Original Issue Price. The Series A Conversion Price, Series A-l Conversion Price and Series B Conversion Price shall be referred to as the **"Conversion Price"** and, individually, as the **"Applicable Conversion Price."** Each such initial Conversion Price, and the rate at which shares of Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

4.1.2 Termination of Conversion Rights. In the event of a liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock; provided that the foregoing termination of Conversion Rights shall not affect the amount(s) otherwise paid or payable in accordance with Sections 2.1, 2.2, 2.3 and 2.4 to the holders of Preferred Stock pursuant to such liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board of Directors of the Corporation. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall (a) provide written notice to the Corporation's transfer agent at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent) that such holder elects to convert all or any number of such holder's shares of Preferred Stock and, if applicable, any event on which such conversion is contingent and (b), if such holder's shares are certificated, surrender the certificate or certificates for such shares of Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent). Such notice shall state such holder's name or the names of the nominees in which such holder wishes the shares of Common Stock to be issued. If required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such notice and, if applicable, certificates (or lost certificate affidavit and agreement) shall be the time of conversion (the **"Conversion**

Time"), and the shares of Common Stock issuable upon conversion of the specified shares shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time (i) issue and deliver to such holder of Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Section 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay all declared but unpaid dividends on the shares of Preferred Stock converted.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Amended and Restated Certificate of Incorporation. Before taking any action which would cause an adjustment reducing the Applicable Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Applicable Conversion Price.

4.3.3 Effect of Conversion. All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Section 4.2 and to receive payment of any dividends declared but unpaid thereon. Any shares of Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to the Applicable Conversion Price shall be made for any declared but unpaid dividends on the Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Applicable Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Article Fourth, the following definitions shall apply:

(a) **"Option"** shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) **"Original Issue Date"** shall mean the date on which the first share of Series B Preferred Stock was issued.

(c) **"Convertible Securities"** shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) **"Additional Shares of Common Stock"** shall mean all shares of Common Stock issued (or, pursuant to Section 4.4.3 below, deemed to be issued) by the Corporation after the Original Issue Date, other than (1) the following shares of Common Stock and (2) shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (clauses (1) and (2), collectively, **"Exempted Securities"):**

(i) shares of Common Stock, Options or Convertible Securities issued as a dividend or distribution on Preferred Stock;

(ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Section 4.5, 4.6, 4.7 or 4.8;

(iii) shares of Common Stock or Options issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Corporation, including the approval of a majority of the Preferred Directors;

(iv) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security; or

(v) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction

approved by the Board of Directors of the Corporation, including the approval of a majority of the Preferred Directors.

4.4.2 No Adjustment of Applicable Conversion Price. No adjustment in the Applicable Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the Requisite Holders agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Applicable Conversion Price pursuant to the terms of Section 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the Applicable Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Applicable Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing the Applicable Conversion Price to an amount which exceeds the lower of (i) the Applicable Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the Applicable Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the Applicable Conversion Price pursuant to the terms of Section 4.4.4 (either because the consideration per share (determined pursuant to Section 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Applicable Conversion Price then in effect, or because such Option or Convertible Security was issued before the Original Issue Date), are revised after the Original Issue Date as a result of an amendment to such terms or any other adjustment

pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Section 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Applicable Conversion Price pursuant to the terms of Section 4.4.4, the Applicable Conversion Price shall be readjusted to such Applicable Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the Applicable Conversion Price provided for in this Section 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Section 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the Applicable Conversion Price that would result under the terms of this Section 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the Applicable Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Applicable Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 4.4.3), without consideration or for a consideration per share less than the Applicable Conversion Price in effect immediately prior to such issuance or deemed issuance, then the Applicable Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = CP_1 * (A + B) \div (A + C).$$

For purposes of the foregoing formula, the following definitions shall apply:

(a) “CP_2” shall mean the Applicable Conversion Price in effect immediately after such issuance or deemed issuance of Additional Shares of Common Stock

(b) “CP_1” shall mean the Applicable Conversion Price in effect immediately prior to such issuance or deemed issuance of Additional Shares of Common Stock;

(c) “A” shall mean the number of shares of Common Stock outstanding immediately prior to such issuance or deemed issuance of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issuance or deemed issuance or upon conversion or exchange of Convertible Securities (including the Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue);

(d) “B” shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued or deemed issued at a price per share equal to CP_1 (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP_1); and

(e) “C” shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration. For purposes of this Section 4.4, the consideration received by the Corporation for the issuance or deemed issuance of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

(i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Corporation; and

(iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board of Directors of the Corporation.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Section 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing:

(i) The total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of

such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to the Applicable Conversion Price pursuant to the terms of Section 4.4.4 then, upon the final such issuance, the Applicable Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Original Issue Date effect a subdivision of the outstanding Common Stock, the Applicable Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Applicable Conversion Price in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event the Applicable Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Applicable Conversion Price then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Applicable Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Applicable Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) that no such adjustment shall be made if the holders of Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Section 2.5, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Sections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors of the Corporation) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Applicable Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Preferred Stock.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Applicable Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than 10 days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of

securities, cash or other property into which the Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Preferred Stock (but in any event not later than 10 days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Applicable Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Deemed Liquidation Event; or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to the Preferred Stock and the Common Stock. Such notice shall be sent at least 10 days prior to the record date or effective date for the event specified in such notice.

5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) the closing of the sale of shares of Common Stock to in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least $75,000,000 of gross proceeds to the Corporation and at a price per share equal to at least two (2) times the Series B Original Issue Price (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock) (a **"Qualified IPO")** or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the Requisite Holders (the time of such closing or the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the **"Mandatory Conversion Time"),** then (i) all outstanding shares of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate as calculated pursuant to Section 4.1.1. and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for

mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Preferred Stock in certificated form shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Preferred Stock converted pursuant to Section 5.1, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender any certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of any certificate or certificates of such holders (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Section 5.2. As soon as practicable after the Mandatory Conversion Time and, if applicable, the surrender of any certificate or certificates (or lost certificate affidavit and agreement) for Preferred Stock, the Corporation shall (a) issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof and (b) pay cash as provided in Section 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Preferred Stock converted. Such converted Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

6. Special Mandatory Conversion.

6.1 Two days after the Milestone Closing (as defined in that certain Series B Preferred Stock Purchase Agreement by and between the Corporation and the other parties thereto (the **"SPA"**)) occurs, if ever, each share of Series B Preferred Stock held by a Defaulting Purchaser (as defined in the SPA) shall be automatically, and without any further action on the part of such Defaulting Purchaser, converted into one (1) fully-paid, nonassessable share of Common Stock (a **"Special Conversion"**).

6.2 Procedural Requirements. Upon a Special Conversion, each holder of shares of Series B Preferred Stock converted pursuant to this Section 6 shall be sent written notice of such Special Conversion and the place designated for mandatory conversion of all such shares of Series B Preferred Stock pursuant to this Section 6. Upon receipt of such notice, each holder of such shares of Series B Preferred Stock in certificated form shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that any such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Series B Preferred Stock converted pursuant to this Section 6, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the time of the Special Conversion (notwithstanding the failure of the holder or holders thereof to surrender any certificates for such shares at or prior to such time), except only the rights of the holders thereof, upon surrender of any certificate or certificates of such holders therefor (or lost certificate affidavit and agreement), to receive the items provided for in the next sentence

of this Section 6.2. As soon as practicable after the Special Conversion and, if applicable, the surrender of any certificate or certificates (or lost certificate affidavit and agreement) for Series B Preferred Stock so converted, the Corporation shall (i) issue and deliver to such holder of Series B Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and (ii) pay in cash such amount as provided in Section 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion. Such converted Series B Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Series B Preferred Stock accordingly.

7. Redemption. Other than as set forth in Section 2.5.2(b), the Preferred Stock is not redeemable.

8. Redeemed or Otherwise Acquired Shares. Any shares of Preferred Stock that are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Preferred Stock following redemption.

9. Waiver. Any of the rights, powers, preferences and other terms of the Preferred Stock set forth herein may be waived on behalf of all holders of Preferred Stock by the affirmative written consent or vote of the Requisite Holders.

10. Notices. Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

FIFTH: Subject to any additional vote required by this Amended and Restated Certificate of Incorporation or Bylaws, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of the Corporation.

SIXTH: Subject to any additional vote required by this Amended and Restated Certificate of Incorporation, the number of directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation. Each director shall be entitled to one vote on each matter presented to the Board of Directors.

SEVENTH: Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

EIGHTH: Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

NINTH: To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware

is amended after approval by the stockholders of this Article Ninth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended. Any repeal or modification of the foregoing provisions of this Article Ninth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

TENTH: To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Corporation (and any other persons to which General Corporation Law permits the Corporation to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

Any amendment, repeal or modification of the foregoing provisions of this Article Tenth shall not (a) adversely affect any right or protection of any director, officer or other agent of the Corporation existing at the time of such amendment, repeal or modification or (b) increase the liability of any director of the Corporation with respect to any acts or omissions of such director, officer or agent occurring prior to, such amendment, repeal or modification.

ELEVENTH: In the event that a director of the Corporation who is also a partner or employee of an entity that is a holder of Preferred Stock or any of its affiliates and that is in the business of investing and reinvesting in other entities (each, a **"Fund"),** acquires knowledge of a potential transaction or matter in such person's capacity as a partner or employee of the Fund and that may be a corporate opportunity for both the Corporation and such Fund, such director shall to the fullest extent permitted by law be deemed to have fully satisfied and fulfilled such director's fiduciary duty to the Corporation and its stockholders with respect to such corporate opportunity, and the Corporation to the fullest extent permitted by law renounces and waives any claim that such business opportunity constituted a corporate opportunity that should have been presented to the Corporation or any of its affiliates, if such director acts in good faith in a manner consistent with the following policy: a corporate opportunity offered to any person who is a director of the Corporation, and who is also a partner, member, employee, service provider, affiliate or agent of a Fund, shall belong to such Fund, unless such opportunity was expressly offered to such person solely in his or her capacity as a director of the Corporation, while such person is performing services in such capacity. Any repeal or modification of this Article Eleventh will only be prospective and will not affect the rights under this Article Eleventh in effect at the time of the occurrence of any actions or omissions to act giving rise to liability. Notwithstanding anything to the contrary contained elsewhere in this Amended and Restated Certificate of Incorporation, the affirmative vote of the Requisite Holders, will be required to amend or repeal, or to adopt any provisions inconsistent with this Article Eleventh.

TWELFTH: Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery in the State of Delaware shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim against the Corporation, its directors, officers or employees arising pursuant to any provision of the Delaware General Corporation Law or the Corporation's certificate of incorporation or bylaws or (iv) any action asserting a claim against the Corporation, its directors, officers or employees governed by the internal affairs doctrine, except for,

as to each of (i) through (iv) above, any claim as to which the Court of Chancery determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within 10 days following such determination), which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or for which the Court of Chancery does not have subject matter jurisdiction. If any provision or provisions of this Article Twelfth shall be held to be invalid, illegal or unenforceable as applied to any person or entity or circumstance for any reason whatsoever, then, to the fullest extent permitted by law, the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this Article Twelfth (including, without limitation, each portion of any sentence of this Article Twelfth containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) and the application of such provision to other persons or entities and circumstances shall not in any way be affected or impaired thereby.

* * *

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Certificate of Incorporation, which restates and integrates and further amends the provisions of this Corporation’s Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

This Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of the Corporation on November 20, 2020.

By: /s/ Daniel J. O’Connell

Daniel O’Connell, Chief Executive Officer

Exhibit 3.2

AMENDED AND RESTATED BY-LAWS

OF

ACUMEN PHARMACEUTICALS, INC.

(A Delaware corporation)

ARTICLE 1

OFFICES: REGISTERED AGENT

§ 1 **Registered Office and Agent.** The corporation shall maintain in the State of Delaware a registered office and a registered agent whose business office is identical with such registered office.

§ 2 **Principal Business Office.** The corporation shall have its principal business office at such location within or without the State of Delaware as the board of directors may from time to time determine.

ARTICLE 2

STOCKHOLDERS

§ 1 **Annual Meeting.** The annual meeting of the stockholders shall be held on the first Tuesday of April each year, at the hour of 10:00 a.m., for the purpose of electing directors and for the transaction of such other business as may properly come before the meeting. If the day fixed for the annual meeting shall be a legal holiday, such meeting shall be held on the next succeeding business day.

§ 2 **Special Meetings.** Special meetings of the stockholders of for any purpose or purposes may be called by the Chairman, the Board of Directors or by the President.

§ 3 **Place of Meetings.** The board of directors may designate any place, either within or without the State of Delaware, as the place of meeting for any annual meeting or for any special meeting called by the board of directors, but if no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the principal business office of the corporation; provided, however, that for any meeting of the stockholders for which a waiver of notice designating a place is signed by all of the stockholders, then that shall be the place for the holding of such meeting.

§ 4 **Notice of Meetings.** Written or printed notice stating the place, date and hour of the meeting of the stockholders and, in the case of a special meeting, the purpose or purposes for which the meeting is called, shall be given to each stockholder of record entitled to vote at the meeting, not less than 10 nor more than 60 days before the date of the meeting, or in the case of a meeting called for the purpose of acting upon a merger or consolidation not less than 20 nor

more than 60 days before the meeting. Such notice shall be given by or at the direction of the secretary. If mailed, such notice shall be deemed to be given when deposited in the United States mail addressed to the stockholder at his or her address as it appears on the records of the corporation, with postage thereon prepaid. If delivered (rather than mailed) to such address, such notice shall be deemed to be given when so delivered.

When a meeting is adjourned to another time or place, notice need not be given of the adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken, unless the adjournment is for more than 30 days or unless a new record date is fixed for the adjourned meeting.

§ 5 **Waiver of Notice.** A waiver of notice in writing signed by a stockholder entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice. Attendance of a stockholder in person or by proxy at a meeting of stockholders shall constitute a waiver of notice of such meeting except when the stockholder or his or her proxy attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

§ 6 **Meeting of All Stockholders.** If all of the stockholders shall meet at any time and place, either within or without the State of Delaware, and shall, in writing signed by all of the stockholders, waive notice of, and consent to the holding of, a meeting at such time and place, such meeting shall be valid without call or notice, and at such meeting any corporate action may be taken.

§ 7 **Record Dates.**

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date on which the resolution fixing the record date is adopted by the board of directors, and which record date shall not be more than 60 nor less than 10 days before the date of such meeting (or 20 days if a merger or consolidation is to be acted upon at such meeting). If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the next day preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the board of directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the board of directors may fix a record date, which record date shall not precede the date on which the resolution fixing the record date is adopted by the board of directors, and which date shall not be more than 10 days after the date upon which the resolution fixing the record date is adopted by the board of directors. If no record date has been fixed by the board of directors, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the board of directors is required by the certificate of incorporation of the corporation or by statute,

shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered in the manner required by law to the corporation at its registered office in the State of Delaware or at its principal place of business or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of the corporation's stockholders are recorded. If no record date has been fixed by the board of directors and prior action by the board of directors is required by the certificate of incorporation or by statute, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the day on which the board of directors adopts the resolution taking such prior action.

(c) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall not be more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

(d) Only those who shall be stockholders of record on the record date so fixed as aforesaid shall be entitled to such notice of, and to vote at, such meeting and any adjournment thereof, or to consent to such corporate action in writing, or to receive payment of such dividend or other distribution, or to receive such allotment of rights, or to exercise such rights, as the case may be, notwithstanding the transfer of any stock on the books of the corporation after the applicable record date.

§ 8 **Lists Of Stockholders**. The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before each meeting of stockholders, a complete list of the stockholders entitled to vote thereat, arranged in alphabetical order, and showing the address of and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days prior to the meeting, either at a place within the municipality where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where said meeting is to be held, and the list shall be produced and kept at the time and place of meeting during the whole time thereof, for inspection by any stockholder who may be present.

§ 9 **Quorum and Vote Required For Action.** Except as may otherwise be provided in the certificate of incorporation of the corporation, the holders of stock of the corporation having a majority of the total votes which all of the outstanding stock of the corporation would be entitled to cast at the meeting, when present in person or by proxy, shall constitute a quorum at any meeting of the stockholders; provided, however, that where a separate vote by a class or classes of stock is required, the holders of stock of such class or classes having a majority of the total votes which all of the outstanding stock of such class or classes would be entitled to cast at the meeting, when present in person or by proxy, shall constitute a quorum entitled to take action with respect to the vote on the matter. Unless a different number of votes is required by statute

or the certificate of incorporation of the corporation, (a) if a quorum is present with respect to the election of directors, directors shall be elected by a plurality of the votes cast by those stockholders present in person or represented by proxy at the meeting and entitled to vote on the election of directors, and (b) in all matters other than the election of directors, if a quorum is present at any meeting of the stockholders, a majority of the votes entitled to be cast by those stockholders present in person or by proxy shall be the act of the stockholders except where a separate vote by class or classes of stock is required, in which case, if a quorum of such class or classes is present, a majority of the votes entitled to be cast by those stockholders of such class or classes present in person or by proxy shall be the act of the stockholders of such class or classes. If a quorum is not present at any meeting of stockholders, then holders of stock of the corporation who are present in person or by proxy representing a majority of the votes cast may adjourn the meeting from time to time without further notice and, where a separate vote by a class or classes of stock is required on any matter, then holders of stock of such class or classes who are present in person or by proxy representing a majority of the votes of such class or classes cast may adjourn the meeting with respect to the vote on that matter from time to time without further notice. At any adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the original meeting. Withdrawal of stockholders from any meeting shall not cause failure of a duly constituted quorum at that meeting.

§ 10 **Proxies**. Each stockholder entitled to vote at a meeting of the stockholders or to express consent to corporate action in writing without a meeting may authorize another person or persons to act for him by proxy, but no proxy shall be valid after three years from its date unless otherwise provided in the proxy. Such proxy shall be in writing and shall be filed with the secretary of the corporation before or at the time of the meeting or the giving of such written consent, as the case may be.

§ 11 **Voting of Shares**. Each stockholder of the corporation shall be entitled to such vote (in person or by proxy) for each share of stock having voting power held of record by such stockholder as shall be provided in the certificate of incorporation of the corporation or, absent provision therein fixing or denying voting rights, shall be entitled to one vote per share.

§ 12 **Voting By Ballot.** Any question or any election at a meeting of the stockholders may be decided by voice vote unless the presiding officer shall order that voting be by ballot or unless otherwise provided in the certificate of incorporation of the corporation or required by statute.

§ 13 **Inspectors.** At any meeting of the stockholders the presiding officer may, or upon the request of any stockholder shall, appoint one or more persons as inspectors for such meeting. Such inspectors shall ascertain and report the number of shares represented at the meeting, based upon their determination of the validity and effect of proxies; count all votes and report the results; and do such other acts as are proper to conduct the election and voting with impartiality and fairness to all the stockholders. Each report of an inspector shall be in writing and signed by him or a majority of them if there is more than one inspector acting at such meeting. If there is more than one inspector, the report of a majority shall be the report of the inspectors. The report of the inspector or inspectors on the number of shares represented at the meeting and the results of the voting shall be prima facie evidence thereof.

§ 14 **Informal Action.** Any corporate action upon which a vote of stockholders is required or permitted may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted and shall be delivered to the corporation in the manner required by law at its registered office within the State of Delaware or at its principal place of business or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders of the corporation are recorded. Every written consent shall bear the date of signature of each stockholder who signs the consent and no written consent shall be effective to take the corporate action referred to therein unless, within 60 days of the earliest dated consent delivered, as aforesaid, written consents signed by a sufficient number of holders to take action are delivered to the corporation in the manner required by law at its registered office within the State of Delaware or at its principal place of business or to an officer or agent of the corporation having or at its principal place of business or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders of the corporation are recorded. Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not so consented in writing.

ARTICLE 3

DIRECTORS

§ 1 **Powers.** The business and affairs of the corporation shall be managed under the direction of its board of directors which may do all such lawful acts and things as are not by statute or by the certificate of incorporation of the corporation or by these by-laws directed or required to be exercised or done by the stockholders.

§ 2 **Number, Election Term of Office and Qualifications.** The number of directors which shall constitute the whole board shall be that number determined by the board from time to time. The directors shall be elected at the annual meeting of the stockholders, except as provided in § 3.3, and each director elected shall hold office until his or her successor is elected and qualified or until his or her earlier death, resignation or removal in a manner permitted by statute or these by-laws. Directors need not be stockholders.

§ 3 **Vacancies.** Vacancies occurring in the board of directors and newly-created directorships resulting from any increase in the authorized number of directors may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director, and any director so chosen shall hold office until the next annual election of directors and until his or her successor is duly elected and qualified or until his or her earlier death, resignation or removal in a manner permitted by statute or these by-laws.

§ 4 **Regular Meetings.** A regular meeting of the board of directors shall be held immediately following the close of, and at the same place as, each annual meeting of

stockholders. No notice of any such meeting, other than this by-law, shall be necessary in order legally to constitute the meeting, provided a quorum shall be present. In the event such meeting is not held at such time and place the meeting may be held at such time and place as shall be specified in a notice given as hereinafter provided for special meetings of the board of directors or as shall be specified in a written waiver signed by all of the directors. The board of directors may provide, by resolution, the time and place for the holding of additional regular meetings without notice other than such resolution.

§ 5 **Special Meetings.** Special meetings of the board may be called by the president or any two directors. The person or persons calling a special meeting of the board shall fix the time and place at which the meeting shall be held and such time and place shall be specified in the notice of such meeting,

§ 6 **Notice.** Notice of any special meeting of the board of directors shall be given at least 2 days previous thereto by written notice to each director at his or her business address or such other address as he or she may have advised the secretary of the corporation to use for such purpose. If delivered, such notice shall be deemed to be given when delivered to such address or to the person to be notified. If mailed, such notice shall be deemed to be given two business days after deposit in the United States mail so addressed, with postage thereon prepaid. If given by telegraph, such notice shall be deemed to be given the next business day following the day the telegram is given to the telegraph company. Such notice may also be given by telephone or other means not specified herein, and in each such case shall be deemed to be given when actually received by the director to be notified. Notice of any meeting of the board of directors shall set forth the time and place of the meeting. Neither the business to be transacted at, nor the purpose of, any meeting of the board of directors (regular or special) need be specified in the notice or waiver of notice of such meeting.

§ 7 **Waiver Of Notice.** A written waiver of notice, signed by a director entitled to notice of a meeting of the board of directors or of a committee of such board of which the director is a member, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice to that director. Attendance of a director at a meeting of the board of directors or of a committee of such board of which the director is a member shall constitute a waiver of notice of such meeting except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

§ 8 **Quorum and Vote Required For Action.** At all meetings of the board of directors, a majority of the number of directors fixed by these by-laws shall constitute a quorum for the transaction of business and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the board of directors except as may be otherwise specifically provided by statute, the certificate of incorporation of the corporation or these by-laws. If a quorum shall not be present at any meeting of the board of directors, a majority of the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present.

§ 9 **Attendance By Conference Telephone.** Members of the board of directors or any committee designated by the board may participate in a meeting of such board or committee by

means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at such a meeting.

§ 10 **Presumption Of Assent.** A director of the corporation who is present at a duly convened meeting of the board of directors at which action on any corporate matter is taken shall be conclusively presumed to have assented to the action taken unless his or her dissent shall be entered in the minutes of the meeting or unless he or she shall file his or her written dissent to such action with the person acting as the secretary of the meeting before the adjournment thereof or shall forward such dissent by registered or certified mail to the secretary of the corporation immediately after the adjournment of the meeting. Such right to dissent shall not apply to a director who voted in favor of such action.

§ 11 **Informal Action.** Unless otherwise restricted by statute, the certificate of incorporation of the corporation or these by-laws, any action required or permitted to be taken at any meeting of the board of directors or of any committee thereof may be taken without a meeting, if a written consent thereto is signed by all the directors or by all the members of such committee, as the case may be, and such written consent is filed with the minutes of proceedings of the board of directors or of such committee.

§ 12 **Compensation.** The directors may be paid their expenses, if any, of attendance at each meeting of the board of directors and at each meeting of a committee of the board of directors of which they are members. The board of directors, irrespective of any personal interest of any of its members, shall have authority to fix compensation of all directors for services to the corporation as directors, officers or otherwise.

§ 13 **Removal.** Any director or the entire board of directors may be removed by the stockholders, with or without cause, by a majority of the votes entitled to be cast at an election of directors.

ARTICLE 4

COMMITTEES

§ 1 **Committees.** By resolution passed by a majority of the whole Board, the Board of Directors may designate one or more committees, each such committee to consist of two or more directors of the Corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member of any meeting of the committee. Any such committee, to the extent provided in the resolution or in these by laws, shall have and may exercise the powers of the Board of Directors in the management of the business and affairs of the Corporation, and may authorize the seal of the Corporation to be affixed to all papers which may require it. In the absence or disqualification of any member of such committee or committees, the member or members thereof present at the meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of such absent or disqualified member.

ARTICLE 5

OFFICERS

§ 1 **Designation, Number, Election.** The board of directors, at its initial meeting and thereafter at its first regular meeting after each annual meeting of stockholders, shall choose the officers of the corporation. Such officers shall be a chairman, a president, a secretary, and a treasurer, and such vice presidents, assistant secretaries and assistant treasurers as the board of directors may choose. The board of directors may appoint such other officers and agents as it shall deem necessary who shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the board. Any two or more offices may be held by the same person. Except as provided in Article 6, election or appointment as an officer shall not of itself create contract rights.

§ 2 **Salaries.** The salaries of all officers and agents of the corporation chosen by the board of directors shall be fixed by the board of directors, and no officer shall be prevented from receiving such salary by reason of the fact that he is also a director of the corporation.

§ 3 **Term Of Office Removal: Vacancies.** Each officer of the corporation chosen by the board of directors shall hold office until the next annual appointment of officers by the board of directors and until his or her successor is appointed and qualified, or until his or her earlier death, resignation or removal in the manner hereinafter provided. Any officer or agent chosen by the board of directors may be removed at any time by the board of directors whenever in its judgment the best interests of the corporation would be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Any vacancy occurring in any office of the corporation at any time or any new offices may be filled by the board of directors for the unexpired portion of the term.

§ 4 **Chairman.** The chairman of the board, if appointed, shall, if present, preside at all meetings of the Board of Directors and exercise and perform such other powers and duties as may be from time to time assigned to him by the Board of Directors.

§ 5 **President.** The president shall be the chief executive officer of the corporation and, subject to the direction and control of the board of directors, shall be in charge of the business of the corporation. In general, the president shall discharge all duties incident to the principal executive office of the corporation and such other duties as may be prescribed by the board of directors from time to time. Without limiting the generality of the foregoing, the president shall see that the resolutions and directions of the board of directors are carried into effect except in those instances in which that responsibility is specifically assigned to some other person by the board of directors; shall preside at all meetings of the stockholders and, if he or she is a director of the corporation, of the board of directors; and, except in those instances in which the authority to execute is expressly delegated to another officer or agent of the corporation or a different mode of execution is expressly prescribed by the board of directors, may execute for the corporation certificates for its shares of stock (the issue of which shall have been authorized by the board of directors), and any contracts, deeds, mortgages, bonds, or other instruments which the board of directors has authorized, and may (without previous authorization by the board of directors) execute such contracts and other instruments as the conduct of the corporation’s business in its ordinary course requires, and may accomplish such execution in each case either under or without

the seal of the corporation and either individually or with the secretary, any assistant secretary, or any other officer thereunto authorized by the board of directors, according to the requirements of the form of the instrument. The president may vote all securities which the corporation is entitled to vote except as and to the extent such authority shall be vested in a different officer or agent of the corporation by the board of directors.

§ 6 **Vice Presidents.** The vice president (and, in the event there is more than one vice president, each of the vice presidents) shall render such assistance to the president in the discharge of his or her duties as the president may direct and shall perform such other duties as from time to time may be assigned by the president or by the board of directors. In the absence of the president or in the event of his or her inability or refusal to act, the vice president (or in the event there may be more than one vice president, the vice presidents in the order designated by the board of directors, or by the president if the board of directors has not made such a designation, or in the absence of any designation, then in the order of seniority of tenure as vice president) shall perform the duties of the president, and when so acting, shall have all the powers of and be subject to all the restrictions upon the president. Except in those instances in which the authority to execute is expressly delegated to another officer or agent of the corporation or a different mode of execution is expressly prescribed by the board of directors or these by-laws, the vice president (or each of them if there are more than one) may execute for the corporation certificates for its shares of stock (the issue of which shall have been authorized by the board of directors), and any contracts, deeds, mortgages, bonds or other instruments which the board of directors has authorized, and may (without previous authorization by the board of directors) execute such contracts and other instruments as the conduct of the corporation's business in its ordinary course requires, and may accomplish such execution in each case either under or without the seal of the corporation and either individually or with the secretary, any assistant secretary, or any other officer thereunto authorized by the board of directors, according to the requirements of the form of the instrument.

§ 7 **Treasurer.** The treasurer shall be the principal accounting and financial officer of the corporation and as such shall perform all the duties incident to the office of treasurer and such other duties as from time to time may be assigned by the board of directors or the president. Without limiting the generality of the foregoing, the treasurer shall have charge of and be responsible for the maintenance of adequate books of account for the corporation and shall have charge and custody of all funds and securities of the corporation and be responsible therefor and for the receipt and disbursement thereof. If required by the board of directors, the treasurer shall give a bond for the faithful discharge of his or her duties in such sum and with such surety or sureties as the board of directors may determine.

§ 8 **Secretary.** The secretary shall perform all duties incident to the office of secretary and such other duties as from time to time may be assigned by the board of directors or president. Without limiting the generality of the foregoing, the secretary shall (a) record the minutes of the meetings of the stockholders and the board of directors in one or more books provided for that purpose and shall include in such books the actions by written consent of the stockholders and the board of directors; (b) see that all notices are duly given in accordance with the provisions of these by-laws or as required by statute; (c) be the custodian of the corporate records and the seal of the corporation; (d) keep a register of the post office address of each

stockholder which shall be furnished to the secretary by such stockholder; (e) sign with the president, or a vice president, or any other officer thereunto authorized by the board of directors, certificates for shares of stock of the corporation (the issue of which shall have been authorized by the board of directors), and any contracts, deeds, mortgages, bonds, or other instruments which the board of directors has authorized, and may (without previous authorization by the board of directors) sign with such other officers as aforesaid such contracts and other instruments as the conduct of the corporation's business in its ordinary course requires, in each case according to the requirements of the form of the instrument, except when a different mode of execution is expressly prescribed by the board of directors; and (f) have general charge of the stock transfer books of the corporation.

§ 9 **Assistant Treasurers And Assistant Secretaries.** The assistant treasurers and assistant secretaries shall perform such duties as shall be assigned to them by the treasurer, in the case of assistant treasurers, or the secretary, in the case of assistant secretaries, or by the board of directors or president in either case. Each assistant secretary may sign with the president, or a vice president, or any other officer thereunto authorized by the board of directors, certificates for shares of stock of the corporation (the issue of which shall have been authorized by the board of directors), and any contracts, deeds, mortgages, bonds, or other instruments which the board of directors has authorized, and may (without previous authorization by the board of directors) sign with such other officers as aforesaid such contracts and other instruments as the conduct of the corporation's business in its ordinary course requires, in each case according to the requirements of the form of the instrument, except when a different mode of execution is expressly prescribed by the board of directors. The assistant treasurers shall, if required by the board of directors, give bonds for the faithful discharge of their duties in such sums and with such sureties as the board of directors shall determine.

ARTICLE 6

INDEMNIFICATION

§ 1 **Indemnification of Directors and Officers.** The corporation shall, to the fullest extent to which it is empowered to do so by the General Corporation Law of Delaware or any other applicable laws, as may from time to time be in effect, indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or officer of the corporation, or is or was serving at the request of the corporation as a director or officer of another corporation, partnership, joint venture, trust or other enterprise, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding.

§ 2 **Advancement of Expenses.** Expenses incurred by an officer or director of the corporation in defending a civil or criminal action, suit or proceeding shall be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall be ultimately determined that he or she is not entitled to be indemnified as authorized by the General Corporation Law of Delaware, as amended.

§ 3 **Contract With the Corporation.** The provisions of this Article 6 shall be deemed to be a contract between the corporation and each person who serves as such officer or director in any such capacity at any time while this Article and the relevant provisions of the General Corporation Law of Delaware, as amended, or other applicable laws, if any, are in effect, and any repeal or modification of any such law or of this Article 6 shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any action, suit or proceeding theretofore or thereafter brought or threatened based in whole or in part upon any such state of facts.

§ 4 **Indemnification of Employees And Agents.** Persons who are not covered by the foregoing provisions of this Article 6 and who are or were employees or agents of the corporation, or are or were serving at the request of the corporation as employees or agents of another corporation, partnership, joint venture, trust or other enterprise, may be indemnified to the extent authorized at any time or from time to time by the board of directors.

§ 5 **Other Rights of Indemnification.** The indemnification and the advancement of expenses provided or permitted by this Article 6 shall not be deemed exclusive of any other rights to which those indemnified may be entitled by law or otherwise, and shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such person.

ARTICLE 7

LIMITATION ON DIRECTOR’S LIABILITY

§ 1 The personal liability for monetary damages to the corporation or its stockholders of a person who serves as a director of the corporation shall be limited if and to the extent provided at the time in the certificate of incorporation of the corporation, as then amended.

ARTICLE 8

CERTIFICATES OF STOCK AND THEIR TRANSFER

§ 1 **Form And Execution Of Certificates.** Every holder of stock in the corporation shall be entitled to have a certificate signed by, or in the name of, the corporation by the president or a vice president and by the secretary or an assistant secretary of the corporation, certifying the number of shares owned. Such certificates shall be in such form as may be determined by the board of directors. During the period while more than one class of stock of the corporation is authorized there will be set forth on the face or back of the certificates which the corporation shall issue to represent each class or series of stock a statement that the corporation will furnish, without charge to each stockholder who so requests, the designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. In case any officer, transfer agent or registrar of the corporation who has signed, or whose facsimile signature has been placed upon, any such certificate shall have ceased to be such officer, transfer agent or

registrar of the corporation before such certificate is issued by the corporation, such certificate may nevertheless be issued and delivered by the corporation with the same effect as if the officer, transfer agent or registrar who signed, or whose facsimile signature was placed upon, such certificate had not ceased to be such officer, transfer agent or registrar of the corporation.

§ 2 **Replacement Certificates.** The board of directors may direct a new certificate to be issued in place of any certificate evidencing shares of stock of the corporation theretofore issued by the corporation alleged to have been lost, stolen or destroyed, upon the making of an affidavit of the fact by the person claiming the certificate to be lost, stolen or destroyed. When authorizing such issue of a new certificate, the board of directors may, in its discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen or destroyed certificate, or his legal representative, to advertise the same in such manner as it shall require and may require such owner to give the corporation a bond in such sum as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen or destroyed. The board of directors may delegate its authority to direct the issuance of replacement stock certificates to the transfer agent or agents of the corporation upon such conditions precedent as may be prescribed by the board.

§ 3 **Transfers of Stock.** Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares of stock of the corporation duly endorsed or accompanied by proper evidence of succession, assignment, or other authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate and record the transaction upon its books, provided the corporation or a transfer agent of the corporation shall not have received a notification of adverse interest and that the conditions of Section 8-401 of Title 6 of the Delaware Code have been met.

§ 4 **Registered Stockholders.** The corporation shall be entitled to treat the holder of record (according to the books of the corporation) of any share or shares of its stock as the holder in fact thereof and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other party whether or not the corporation shall have express or other notice thereof, except as expressly provided by the laws of the State of Delaware.

ARTICLE 9

CONTRACTS, LOANS, CHECKS AND DEPOSITS

§ 1 **Contracts.** The board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute and deliver any instrument in the name of and on behalf of the corporation, and such authority may be general or confined to specific instances; provided, however, that this § 9.1 shall not be a limitation on the powers of office granted under Article 5 of these by-laws.

§ 2 **Loans.** No loans shall be contracted on behalf of the corporation and no evidences of indebtedness shall be issued in its name unless authorized by a resolution of the board of directors. Such authority may be general or confined to specific instances.

§ 3 **Checks, Drafts And Other Instruments.** All checks, drafts or other orders for the payment of money and all notes or other evidences of indebtedness issued in the name of the

corporation shall be signed by such officer or officers or such agent or agents of the corporation and in such manner as from time to time may be determined by the resolution of the board of directors or by an officer or officers of the corporation designated by the board of directors to make such determination.

§ 4 **Deposits.** All funds of the corporation not otherwise employed shall be deposited from time to time to the credit of the corporation in such banks, trust companies or other depositaries as the board of directors, or an officer or officers designated by the board of directors, may select.

ARTICLE 10

MISCELLANEOUS PROVISIONS

§ 1 **Dividends**. Subject to any provisions of any applicable statute or of the certificate of incorporation, dividends may be declared upon the capital stock of the corporation by the board of directors at any regular or special meeting thereof; and such dividends may be paid in cash, property or shares of stock of the corporation.

§ 2 **Reserves**. Before payment of any dividends, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the board of directors from time to time, in its discretion, determines to be proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the board of directors shall determine to be conducive to the interests of the corporation, and the directors may modify or abolish any such reserve in the manner in which it was created.

§ 3 **Voting Stock Of Other Corporations.** In the absence of specific action by the board of directors, the president shall have authority to represent the corporation and to vote, on behalf of the corporation, the securities of other corporations, both domestic and foreign, held by the corporation.

§ 4 **Fiscal Year.** The fiscal year of the corporation shall begin on the first day of January in each year and end on the last day of the next following December.

§ 5 **Seal.** The corporate seal shall have inscribed thereon the name of the corporation and the words “Corporate Seal, Delaware”. The seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise applied.

§ 6 **Severability.** If any provision of these by-laws, or its application thereof to any person or circumstances, is held invalid, the remainder of these by-laws and the application of such provision to other persons or circumstances shall not be affected thereby.

§ 7 **Amendment.** These by-laws may be amended or repealed, or new by-laws may be adopted, by the board of directors of the corporation. These by-laws may also be amended or repealed, or new by-laws may be adopted, by action taken by the stockholders of the corporation.

Exhibit 4.1

AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**"), is made as of November 20, 2020, by and among **ACUMEN PHARMACEUTICALS, INC.**, a Delaware corporation (the "**Company**"), each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**" and any Additional Purchaser (as defined in the Purchase Agreement) that becomes a party to this Agreement in accordance with Section 6.9 hereof.

RECITALS

WHEREAS, certain of the Investors (the "**Existing Investors**") hold shares of Series A Preferred Stock, Series A-1 Preferred Stock and/or shares of Common Stock issued upon conversion thereof and possess registration rights, information rights, rights of first offer, and other rights pursuant to that certain Amended and Restated Investors' Rights Agreement dated as of October 19, 2018, by and among the Company and such Existing Investors (as amended, the "**Prior Agreement**"); and

WHEREAS, the Existing Investors are holders of a majority of the Registrable Securities (as defined in the Prior Agreement), and desire to amend and restate the Prior Agreement in its entirety and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them

under the Prior Agreement; and

WHEREAS, certain of the Investors are parties to that certain Series B Preferred Stock Purchase Agreement of even date herewith by and among the Company and such Investors (the "**Purchase Agreement**"), under which certain of the Company's and such Investors' obligations are conditioned upon the execution and delivery of this Agreement by such Investors, Existing Investors holding at least a majority of the Registrable Securities, and the Company;

NOW, **THEREFORE**, the Existing Investors hereby agree that the Prior Agreement is hereby amended and restated in its entirety by this Agreement, and the parties to this Agreement further agree as follows:

1. Definitions. For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, limited partner, managing member, officer, director or trustee of such Person, or any investment fund (including, without limitation, any venture capital fund) or registered investment company now or hereafter existing that is controlled by one or more general partners, managing members or investment advisers of, or shares the same management company or investment adviser with, such Person.

1.2 "**Board of Directors**" means the board of directors of the Company.

1.3 "**Certificate of Incorporation**" means the Company's Amended and Restated Certificate of Incorporation, as amended and/or restated from time to time.

1.4 "**Common Stock**" means shares of the Company's common stock, par value $0.0001 per share.

1.5 "**Damages**" means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.6 "**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly)**,** Common Stock, including options and warrants.

1.7 "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.8 "**Excluded Registration**" means (i) a registration relating to the sale or grant of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, equity incentive or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.9 "**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.10 "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits forward incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.11 "**GAAP**" means generally accepted accounting principles in the United States as in effect from time to time.

1.12 "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.13 "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, life partner or similar statutorily-recognized domestic partner, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including, adoptive relationships, of a natural person referred to herein.

1.14 "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.15 "**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

1.16 "**Key Employee**" means any executive-level employee (including, division director and vice president-level positions) as well as any employee who, either alone or in concert with others, develops, invents, programs, or designs any Company Intellectual Property (as defined in the Purchase Agreement).

1.17 "**Major Investor**" means (i) any Investor that, individually or together with such Investor's Affiliates, holds at least 1,333,333 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof) and (ii) Blackwell Partners LLC ("**Blackwell**") for so long as it holds shares of Registrable Securities.

1.18 "**New Securities**" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.19 "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.20 "**Preferred Director**" means any director of the Company that the holders of record of a class, classes or series of Preferred Stock are entitled to elect, exclusively and as a separate class, pursuant to the Certificate of Incorporation.

1.21 "**Preferred Stock**" means, collectively, shares of the Series A Preferred Stock, the Series A-1 Preferred Stock and the Series B Preferred Stock.

1.22 "**RA Capital**" means RA Capital Healthcare Fund, L.P, RA Capital Nexus Fund II, L.P. and their respective Affiliates.

1.23 "**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock, excluding any Common Stock issued upon conversion of the Series B Preferred Stock pursuant to the "Special Mandatory Conversion" provisions of the Certificate of Incorporation; (ii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company, acquired by the Investors after the date hereof; and (iii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clause (i) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 6.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.13 of this Agreement.

1.24 "**Registrable Securities then outstanding**" means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.25 "**Restricted Securities**" means the securities of the Company required to be notated with the legend set forth in Section 2.12(b) hereof.

1.26 "**Sands Capital**" means Sands Capital Ventures Discovery Fund III, L.P., Sands Capital Global Venture Fund II, L.P., Sands Capital Life Sciences Pulse Fund, LLC and/or their respective Affiliates.

1.27 “**SEC**” means the Securities and Exchange Commission.

1.28 “**SEC Rule 144**” means Rule 144 promulgated by the SEC under the Securities Act.

1.29 “**SEC Rule 145**” means Rule 145 promulgated by the SEC under the Securities Act.

1.30 “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.31 “**Selling Expenses**” means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

1.32 “**Series A Preferred Stock**” means shares of the Company’s Series A Preferred Stock, par value $0.0001 per share.

1.33 “**Series A-1 Preferred Stock**” means shares of the Company’s Series A-1 Preferred Stock, par value $0.0001 per share.

1.34 “**Series B Preferred Stock**” means shares of the Company’s Series B Preferred Stock, par value $0.0001 per share.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) three years after the date of this Agreement or (ii) 180 days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of a majority of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement with respect to all of the Registrable Securities then outstanding held by such Holders covering the registration of Registrable Securities with an anticipated aggregate offering price, net of Selling Expenses, of at least $5 million, then the Company shall (x) within 10 days after the date such request is given, give notice thereof (the “**Demand Notice**”) to all Holders other than the Initiating Holders; and (y) as soon as practicable, and in any event within 60 days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within 20 days of the date the Demand Notice is given, and in each case, subject to the limitations of Sections 2.1(c) and 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least 30% of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $5 million, then the Company shall (i) within 10 days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within 45 days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested

to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within 20 days of the date the Demand Notice is given, and in each case, subject to the limitations of Sections 2.1(c) and 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because it would be materially detrimental to the Company and its stockholders for such registration statement to be filed and it is therefore necessary to defer the filing of such registration statement, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than 120 days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than twice in any 12 month period.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a) (i) during the period that is 60 days before the Company's good faith estimate of the date of filing of, and ending on a date that is 180 days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected two registrations pursuant to Section 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b) (i) during the period that is 30 days before the Company's good faith estimate of the date of filing of, and ending on a date that is 90 days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (ii) if the Company has effected two registrations pursuant to Section 2.1(b) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

2.2 Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its securities under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within 20 days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 2.6.

2.3 Underwriting Requirements.

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting; provided, however, that no Holder (or any of their assignees) shall be required to make any representations, warranties or indemnities except as they relate to Holder's ownership of shares, and authority to enter into the underwriting agreement and to such Holder's intended method of distribution, and the liability of such Holder shall be several and not joint, and limited to an amount equal to the net proceeds from the offering received by such Holder. Notwithstanding any other provision of this Section 2.3, if the managing underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Securities included in the offering be reduced below 25% of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities

are included in such offering. For purposes of the provision in this Section 2.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Section 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 2.3(a), fewer than 50% of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to 120 days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that such 120 day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

In addition, the Company shall ensure that, at all times after any registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective, its insider trading policy shall provide that the Company's directors may implement a trading program under Rule 10b5-1 of the Exchange Act.

2.5 Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements, not to exceed $50,000, of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Sections 2.1(a) or 2.1(b), as the case may be then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Sections 2.1(a) or 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration except to the extent such information has been corrected in a subsequent writing prior to or concurrently with the sale of Registrable Securities to the Person asserting the claim.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration and has not been corrected in a subsequent writing prior to or concurrently with the sale of Registrable Securities to the Person asserting the claim; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing

interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either: (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control; provided, however, that any matter expressly provided for or addressed by the foregoing provisions that is not expressly provided for or addressed by the underwriting agreement shall be controlled by the foregoing provisions.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after 90 days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); and (ii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of a majority of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included; provided that this limitation shall not apply to Registrable Securities acquired by any additional Investor that becomes a party to this Agreement in accordance with Section 6.9.

2.11 "Market Stand-off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock or any other equity securities under the Securities Act on a registration statement on Form S-1, and ending on the date specified by the Company and the managing underwriter (such period not to exceed 180 days, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in applicable FINRA rules or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall apply only to the IPO and shall not apply to (a) the sale of any shares of Common Stock (x) purchased by the Holder in connection with the IPO, whether or not pursuant to an underwriting agreement, a private placement that is concurrent with the IPO, or otherwise, or (y) acquired in the open market at any time on or after the IPO; (b) the sale of any shares to an underwriter pursuant to an underwriting agreement, or (c) the transfer of any shares to any trust for the direct or indirect benefit of the Holder or the immediate family of the Holder, provided that the trustee of the trust agrees to be bound in

writing by the restrictions set forth herein, and provided further that any such transfer shall not involve a disposition for value, and shall be applicable to the Holders only if all officers and directors are subject to the same restrictions and the Company uses commercially reasonable efforts to obtain a similar agreement from all stockholders individually owning more than 1% of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock). The underwriters in connection with such registration are intended third-party beneficiaries of this Section 2.11 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Company stockholders that are subject to such agreements, based on the number of shares subject to such agreements.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate, instrument, or book entry representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.12(c)) be notated with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of such Restricted Securities, by acceptance of ownership thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested

by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144; or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration; provided that each transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate, instrument, or book entry representing the Restricted Securities transferred as above provided shall be notated with, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate instrument, or book entry shall not be notated with such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Sections 2.1 or 2.2 shall terminate upon the earliest to occur of:

(a) the closing of a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation, in which the consideration received by the Investors in such Deemed Liquidation Event is in the form of cash and/or publicly traded securities, or if the Investors receive registration rights from the acquiring company or other successor to the Company that are reasonably comparable to those set forth in this Section 2;

(b) such time after consummation of the IPO as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares without limitation during a three-month period without registration (and without the requirement for the Company to be in compliance with the current public information required under subsection (c)(1) of SEC Rule 144) and such Holder (together with its "affiliates" as determined under SEC Rule 144) holds less than one percent (1%) of the outstanding capital stock of the Company; and

(c) the third anniversary of the IPO.

3. Information Rights.

3.1 Delivery of Financial Statements. The Company shall deliver to each Major Investor, *provided* that the Board of Directors has not reasonably determined that such Major Investor is a competitor of the Company; *provided further* that Sands Capital, RA Capital and Blackwell shall not be determined to be a competitor of the Company for any purpose under this Agreement:

(a) as soon as practicable, but in any event within 120 days after the end of each fiscal year of the Company (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined in Section 3.1(e)) for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of regionally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within 45 days after the end of each of the first three quarters of each fiscal year of the Company, unaudited statements of income and cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments; and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within 30 days after the end of each month, unaudited statements of income and cash flows for such month, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(d) as soon as practicable, but in any event within 45 days after the end of each quarter of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in a form reasonably acceptable to each Major Investor, in sufficient detail as to permit the Major Investors to calculate their respective percentage equity ownership in the Company, and certified by the chief financial officer or chief executive officer of the Company as being true, complete, and correct;

(e) as soon as practicable, but in any event 30 days before the end of each fiscal year, a budget and business plan for the next fiscal year, prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company (such budget and business plan that is approved by the Board of Directors including the vote of a majority of the Preferred Directors then seated (the "**Requisite Preferred Director Vote**") is collectively referred to herein as the "**Budget**"); and

(f) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Major Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this Section 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in a form acceptable to the Company); or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date 60 days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor, provided that the Board of Directors has not reasonably determined that such Major Investor is a competitor of the Company, at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Termination of Information. The covenants set forth in Section 3.1 and Section 3.2 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon the closing of a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation, whichever event occurs first; provided, that, with respect to clause (iii), the covenants set forth in Section 3.1 shall only terminate if the consideration received by the Investors in such Deemed Liquidation Event is in the form of cash and/or publicly traded securities or if the Investors receive financial information from the acquiring company or other successor to the Company comparable to those set forth in Section 3.1.

3.4 Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.4 by such Investor), (b) is or has been independently developed or conceived by such Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to such Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.4, provided that the Board of Directors has not reasonably determined that such prospective purchaser is a competitor of the Company; (iii) to any Affiliate, any current or prospective partner, member or stockholder, or any wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, regulation, rule, court order or subpoena, provided that such Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

4. Rights to Future Stock Issuances.

4.1 Right of First Offer. Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Major Investor. A Major Investor shall be entitled to apportion the right of first offer hereby granted to it in such proportions as it deems appropriate, among (i) itself and (ii) its Affiliates.

(a) The Company shall give notice (the "**Offer Notice**") to each Major Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within 20 days after the Offer Notice is given, each Major Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock then held by such Major Investor (including all shares of Common Stock then issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by such Major Investor) bears to the total Common Stock of the Company then outstanding (assuming full conversion and/or exercise, as applicable, of all Preferred Stock and any other Derivative Securities then outstanding). At the expiration of such twenty (20) day period, the Company shall promptly notify each Major Investor that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising Investor**") of any other Major Investor's failure to do likewise. During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Major Investors were entitled to subscribe but that were not subscribed for by the Major Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Section 4.1(b) shall occur within the later of 90 days of the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Section 4.1(c).

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Section 4.1(b), the Company may, during the 90 day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within 30 days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Major Investors in accordance with this Section 4.1.

(d) Notwithstanding any provision hereof to the contrary, in lieu of complying with the provisions of this Section 4.1, the Company may elect to give notice to the Major Investors within thirty (30) days after the issuance of New Securities. Such notice shall describe the type, price, and terms of the New Securities. Each Major Investor shall have twenty (20) days from the date notice is given to elect to purchase up to the number of New Securities that would, if purchased by such Major Investor, maintain such Major Investor's percentage-ownership position, calculated as set forth in Section 4.1(b) before giving effect to the issuance of such New Securities.

(e) The right of first offer in this Section 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Certificate of Incorporation); (ii) shares of Common Stock issued in the IPO; and (iii) the issuance of shares of Preferred Stock to Additional Purchasers pursuant to Section 1.3 of the Purchase Agreement

4.2 Termination. The covenants set forth in Section 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of the Qualified IPO, as such term is defined in the Certificate of Incorporation, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon the closing of a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation in which the consideration received by the Investors in such Deemed Liquidation Event is in the form of cash and/or publicly traded securities, or if the Investors receive participation rights from the acquiring company or other successor to the Company reasonably comparable to those set forth in this Section 4, whichever event occurs first.

5. Additional Covenants.

5.1 Insurance. The Company shall use commercially reasonable efforts to maintain, from financially sound and reputable insurers Directors and Officers liability insurance in an amount and on terms and conditions satisfactory to the Board of Directors, until such time as the Board of Directors determines that such insurance should be discontinued. The policy will not be cancelable by the Company without prior approval by the Board of Directors.

5.2 Employee Agreements. The Company will cause (i) each Person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement; and (ii) each Key Employee to enter into a one year non-competition and non-solicitation agreement, substantially in the form approved by the Board of Directors.

5.3 Employee Stock. Unless otherwise approved by the Board of Directors, all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a 4 year period, with the first 25% of such shares vesting following 12 months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following 36 months, and (ii) a market stand-off provision substantially similar to that in Section 2.11. Without the prior approval by the Board of Directors, the Company shall not amend, modify, terminate, waive or otherwise alter, in whole or in part, any stock purchase, stock restriction or option agreement with any existing employee or service provider if such amendment would cause it to be inconsistent with this Section 5.3. In addition, unless otherwise approved by the Board of Directors, the Company shall retain (and not waive) a "right of first refusal" on employee transfers until the Company's IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

5.4 Board Matters. Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse the directors for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors. Each non-employee director shall be entitled in such person's discretion to be a member of any committee of the Board of Directors.

5.5 Matters Requiring Preferred Director Approval. During such time or times as the holders of Preferred Stock are entitled to elect a Preferred Director and such seat is filled, the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board of Directors, which approval must include the Requisite Preferred Director Vote:

(a) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other corporation, partnership, or other entity unless it is wholly owned by the Company;

(b) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board of Directors;

(c) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(d) make any investment inconsistent with any investment policy approved by the Board of Directors;

(e) incur any aggregate indebtedness in excess of $250,000 that is not already included in the Budget (as defined in Section 3.1(e)), other than trade credit incurred in the ordinary course of business;

(f) otherwise enter into or be a party to any transaction with any director, officer, or employee of the Company or any "associate" (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, including without limitation any "management bonus" or similar plan providing payments to employees in connection with a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation, except for transactions contemplated by this Agreement and the Purchase Agreement;

(g) hire, terminate, or change the compensation of the executive officers, including approving any option grants or stock awards to executive officers;

(h) change the principal business of the Company, enter new lines of business, or exit the current line of business;

(i) sell, assign, license, pledge, or encumber material technology or intellectual property, other than licenses granted in the ordinary course of business; or

(j) enter into any corporate strategic relationship involving the payment, contribution, or assignment by the Company or to the Company of money or assets greater than $250,000.

5.6 Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, the Certificate of Incorporation, or elsewhere, as the case may be.

5.7 Indemnification Matters. The Company hereby acknowledges that one (1) or more of the Preferred Directors nominated to serve on the Board of Directors by the Investors may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Investors and certain of their Affiliates (collectively, the "**Investor Indemnitors**"). The Company hereby

agrees (a) that it is the indemnitor of first resort (i.e., its obligations to any such Preferred Director are primary and any obligation of the Investor Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Preferred Director are secondary), (b) that it shall be required to advance the full amount of expenses incurred by such Preferred Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Preferred Director to the extent legally permitted and as required by the Certificate of Incorporation or Bylaws of the Company (or any agreement between the Company and such Preferred Director), without regard to any rights such Preferred Director may have against the Investor Indemnitors, and, (c) that it irrevocably waives, relinquishes and releases the Investor Indemnitors from any and all claims against the Investor Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Investor Indemnitors on behalf of any such Preferred Director with respect to any claim for which such Preferred Director has sought indemnification from the Company shall affect the foregoing and the Investor Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Preferred Director against the Company. The Preferred Directors and the Investor Indemnitors are intended third party beneficiaries of this Section 5.7 and shall have the right, power and authority to enforce the provisions of this Section 5.7 as though they were a party to this Agreement.

5.8 Right to Conduct Activities. The Company hereby agrees and acknowledges that each of Sands Capital Ventures, LLC (together with its Affiliates), PBM ACU Holdings, LLC (together with its Affiliates), PBM ACU Holdings II, LLC (together with its Affiliates), Blackwell, and RA Capital (together with its Affiliates) is a professional investment organization, and as such reviews the business plans and related proprietary information of many enterprises, some of which may compete directly or indirectly with the Company's business (as currently conducted or as currently propose to be conducted). Nothing in this Agreement shall preclude or in any way restrict the Investors from evaluating or purchasing securities, including publicly traded securities, of a particular enterprise, or investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company; and the Company hereby agrees that, to the extent permitted under applicable law, Sands Capital Ventures, LLC (and its Affiliates), PBM ACU Holdings, LLC (together with its Affiliates), PBM ACU Holdings II, LLC (together with its Affiliates), Blackwell and RA Capital (or its Affiliates) shall not be liable to the Company for any claim arising out of, or based upon, (i) the investment by Sands Capital Ventures, LLC (or its Affiliates), PBM ACU Holdings, LLC (together with its Affiliates), PBM ACU Holdings II, LLC (together with its Affiliates), Blackwell or RA Capital (or its Affiliates) in any entity competitive with the Company, or (ii) actions taken by any partner, officer, employee or other representative of Sands Capital Ventures, LLC (or its Affiliates), PBM ACU Holdings, LLC (together with its Affiliates), PBM ACU Holdings II, LLC (together with its Affiliates), Blackwell or RA Capital (or its Affiliates) to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve (x) any of the Investors from liability associated with the unauthorized disclosure of the Company's confidential information obtained pursuant to this Agreement, or (y) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company.

5.9 Side Letters. The Company agrees and covenants that it will promptly notify (and provide a copy to) RA Capital and Sands Capital if it enters into any separate agreements or side letters with any other shareholder of the Company or an affiliate of any such shareholder (other than the Transaction Agreements (as defined in the Purchase Agreement) and employment related agreements in the ordinary course).

5.10 Termination of Covenants. The covenants set forth in this Section 5, except for Section 5.6, shall terminate and be of no further force or effect (i) immediately before the consummation

of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation, whichever event occurs first.

6. Miscellaneous.

6.1 Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate of a Holder; (ii) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; or (iii) after such transfer, holds shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (1) that is an Affiliate or stockholder of a Holder; (2) who is a Holder's Immediate Family Member; or (3) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall, as a condition to the applicable transfer, establish a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2 Governing Law. This Agreement shall be governed by the internal law of the State of Delaware, without regard to conflict of law principles that would result in the application of any law other than the law of the State of Delaware.

6.3 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

6.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices.

(a) All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (iii) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of

receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Section 6.5. address as subsequently modified by written notice given in accordance with this Section 6.5. If notice is given to the Company, a copy (which shall not constitute notice) shall also be sent to Cooley LLP, 1299 Pennsylvania Avenue NW, Suite 700, Washington, DC 20004, Attention: Brooke Nussbaum. If notice is given to Investors, a copy (which shall not constitute notice) shall also be sent to Wilson Sonsini Goodrich & Rosati, Professional Corporation, 28 State Street, 37th Floor, Boston, MA 02109, Attention: Jennifer Fang.

(b) Consent to Electronic Notice. Each Investor consents to the delivery of any stockholder notice pursuant to the Delaware General Corporation Law (the "**DGCL**"), as amended or superseded from time to time, by electronic transmission pursuant to Section 232 of the DGCL (or any successor thereto) at the electronic mail address or the facsimile number set forth below such Investor's name on the Schedule hereto, as updated from time to time by notice to the Company, or as on the books of the Company. To the extent that any notice given by means of electronic transmission is returned or undeliverable for any reason, the foregoing consent shall be deemed to have been revoked until a new or corrected electronic mail address has been provided, and such attempted electronic notice shall be ineffective and deemed to not have been given. Each Investor agrees to promptly notify the Company of any change in such stockholder's electronic mail address, and that failure to do so shall not affect the foregoing.

6.6 Amendments and Waivers. Any term of this Agreement may be amended, modified or terminated and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of (i) the Company and (ii) the holders of at least 67% of the shares of Common Stock issued or issuable upon conversion of the shares of Series B Preferred Stock held by the Investors (voting together as a single class), excluding any Common Stock issued upon conversion of the Series B Preferred Stock pursuant to the "Special Mandatory Conversion" provisions of the Certificate of Incorporation.; provided that the Company may in its sole discretion waive compliance with Section 2.12(c) (and the Company's failure to object promptly in writing after notification of a proposed assignment allegedly in violation of Section 2.12(c) shall be deemed to be a waiver); and provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, (a) this Agreement may not be amended, modified or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, modification, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction) and (b) Sections 3.1 and 3.2, Section 4 and any other section of this Agreement applicable to the Major Investors (including this clause (b) of this Section 6.6) may not be amended, modified, terminated or waived without the written consent of the holders of a majority of the Registrable Securities then outstanding and held by the Major Investors. Notwithstanding the foregoing, Schedule A hereto may be amended by the Company from time to time to add transferees of any Registrable Securities in compliance with the terms of this Agreement without the consent of the other parties; and Schedule A hereto may also be amended by the Company after the date of this Agreement without the consent of the other parties to add information regarding any additional Investor who becomes a party to this Agreement in accordance with Section 6.9. Any amendment, modification, termination, or waiver effected in accordance with this Section 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

6.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Preferred Stock after the date hereof, whether pursuant to the Purchase Agreement or otherwise, any purchaser of such shares of Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled. Upon the effectiveness of this Agreement, the Prior Agreement shall be deemed amended and restated and superseded and replaced in its entirety by this Agreement, and shall be of no further force or effect.

6.11 Dispute Resolution. The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of Delaware and to the jurisdiction of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of Delaware or the United States District Court for the District of Delaware, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

6.12 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.13 Special Mandatory Conversion. In the event that the Series B Preferred Stock held by an Investor is converted into Common Stock (the "**Converted Stock**") pursuant to the "Special Mandatory Conversion" provisions of the Certificate of Incorporation, such Investor shall cease to be entitled to any of the rights and privileges granted to an Investor or Major Investor pursuant to this Agreement with respect to such shares of Converted Stock.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

COMPANY:

ACUMEN PHARMACEUTICALS, INC.

By: /s/ Daniel J. O'Connell
Name: Daniel J. O'Connell
Title: Chief Executive Officer

Address: 427 Park Street
Charlottesville, VA 22902

E-Mail: doconnell@acumenpharm.com

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Joseph Andrasko

Joseph Andrasko

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors’ Rights Agreement as of the date first written above.

INVESTOR:

ARROCHAR INVESTMENTS LLC

By: /s/ John Macfarlane
Name: John Macfarlane
Title: Managing Member

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

BLACKROCK HEALTH SCIENCES TRUST

By: BlackRock Advisors, LLC, its Investment Adviser

By: /s/ Hongying Erin Xie
Name: Hongying Erin Xie
Title: Managing Director

BLACKROCK HEALTH SCIENCES TRUST II
By: BlackRock Advisors, LLC, its Investment Adviser

By: /s/ Hongying Erin Xie
Name: Hongying Erin Xie
Title: Managing Director

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

BLACKWELL PARTNERS LLC – SERIES A

By: /s/ Abayomi A. Adigun
Name: Abayomi A. Adigun
Title: Investment Manager
DUMAC, Inc., Authorized Signatory

By: /s/ Jannine M. Lall
Name: Jannine M. Lall
Title: Head of Finance & Controller
DUMAC, Inc., Authorized Signatory

Address: Blackwell Partners LLC – Series A
280 S. Mangum Street
Suite 210
Durham, NC 27701
Attn: Jannine Lall

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Frank A. Bonsal, Jr.

Frank A. Bonsal, Jr.

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

BIOTECHNOLOGY VALUE FUND, LP
By: BVF Partners, L.P., its general partner
By: BVF, Inc., its general partner

By: /s/ Mark N. Lampert
Name: Mark N. Lampert
Title: President

INVESTMENT 10, LLC
By: BVF Partners, L.P., its attorney-in-fact
By: BVF, Inc., its general partner

By: /s/ Mark N. Lampert
Name: Mark N. Lampert
Title: President

BIOTECHNOLOGY VALUE FUND II, LP
By: BVF Partners, L.P., its general partner
By: BVF, Inc., its general partner

By: /s/ Mark N. Lampert
Name: Mark N. Lampert
Title: President

BVF INVESTMENTS, L.L.C.
By: BVF Partners, L.P., its manager
By: BVF, Inc., its general partner

By: /s/ Mark N. Lampert
Name: Mark N. Lampert
Title: President

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Alex Casdin

Alex Casdin

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

CHARLOTTESVILLE AREA COMMUNITY FOUNDATION

By: /s/ Jan Dorman

Name: Jan Dorman

Title: Director of Finance

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

CLELAND FAMILY III, LLC

By: /s/ Bruce Cleland
Name: Bruce Cleland
Title: Managing Partner

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Terrence D. Daniels
Terrence D. Daniels

TERRENCE D. DANIELS 2008 CHILDREN'S TRUST

By: /s/ Terrence D. Daniels
Name: Terrence D. Daniels
Title: Trustee

TERRENCE D. DANIELS 2010 GRANDCHILDREN'S TRUST

By: /s/ Terrence D. Daniels
Name: Terrence D. Daniels
Title: Trustee

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Tim Davis

Tim Davis

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

EUGENE V. FIFE REVOCABLE TRUST DTD APRIL 24, 2002

By: /s/ Eugene V. Fife
Name: Eugene V. Fife
Title: Trustee

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Caleb Finch
Caleb Finch

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

GLYNN INVESTMENT COMPANY, LLC

By: /s/ John Glynn
Name: John Glynn
Title: Chief Executive

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Philip Goelet

Philip Goelet

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

H7 HOLDINGS, LLC

By: /s/ Robert Hardie
Name: Robert Hardie
Title: Co-Chairman and CEO

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

MARK J. KINGTON & ANN KINGTON TBE
c/o Dyson Capital Advisors, LLC

/s/ Mark J. Kington
Mark J. Kington

/s/ Ann Kington
Ann Kington

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

KNOLLWOOD INVESTMENT FUND LLC

By: /s/ Kevin D. Irwin, Jr.
Name: Kevin D. Irwin, Jr.
Title: President of Managing Member

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

MARC D. KOZIN IRREVOCABLE TRUST, DONNA M. KOZIN, TRUSTEE

By: /s/ Donna M. Kozin
Name: Donna M. Kozin
Title: Trustee

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Grant A. Krafft

Grant A. Krafft

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

LEVEL ONE PARTNERS, LLC

By: /s/ Robert Hardie
Name: Robert Hardie
Title: Manager

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

/s/ John L. Lewis IV

John L. Lewis IV

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

DAVID V MILLIGAN TRUST DATED OCT 19, 1991

By: /s/ David Milligan
Name: David Milligan
Title: Trustee

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

MRW BLIND TRUST
c/o Dyson Capital Advisors, LLC

By: /s/ Nicholas Perrins
Name: Nicholas Perrins
Title: Trustee

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

/s/ Edward Meigs
Edward Meigs

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

JAMES B. MURRAY, JR. REVOCABLE TRUST U/A/D 8/5/1991

By: /s/ James B. Murray, Jr.
Name: James B. Murray, Jr.
Title: Trustee

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

NEUROVENTURES CAPITAL LLC

By: /s/ Daniel O'Connell
Name: Daniel O'Connell
Title: Managing Member

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

PBM ACU HOLDINGS, LLC
By PBM Capital Group, LLC, its manager

By: /s/ Paul B. Manning
Name: Paul B. Manning
Title: CEO

Date: 11/20/2020

PBM ACU HOLDINGS II, LLC
By: PBM Capital Group, LLC, its manager

By: /s/ Paul B. Manning
Name: Paul B. Manning
Title: CEO

Date: 11/20/2020

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

PRAXIS TECHNOLOGIES L.P.

By: /s/ James B. Murray, Jr.
Name: James B. Murray, Jr.
Title: Manager

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

PROTECTIVE INSURANCE COMPANY INC.

By: /s/ Mark McNeill
Name: Mark McNeill
Title: Financial Reporting Manager

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Healthcare Fund GP, LLC
Its General Partner

By: /s/ Rajeev Shah
Name: Rajeev Shah
Title: Manager

Address: RA Capital Management, L.P.
200 Berkeley Street
18th Floor
Boston, MA 02116
Attn: General Counsel

RA CAPITAL NEXUS FUND II, L.P.
By: RA Capital Nexus Fund II GP, LLC
Its: General Partner

By: /s/ Rajeev Shah
Name: Rajeev Shah
Title: Manager

Address: RA Capital Management, L.P.
200 Berkeley Street
18th Floor
Boston, MA 02116
Attn: General Counsel

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

R3 CAPITAL STRATEGIES, LLC

By: /s/ Robert Brown
Name: Robert Brown
Title: Owner

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

/s/ Dru Rasmussen

Dru Rasmussen

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

ROCK SPRINGS CAPITAL MASTER FUND LP

By: Rock Springs General Partner LLC, its General Partner

By: /s/ Mark Bussard
Name: Mark Bussard
Title: Member

FOUR PINES MASTER FUND LP
By: Four Pines General Partner LLC, its General Partner

By: /s/ Mark Bussard
Name: Mark Bussard
Title: Member

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

SANDS CAPITAL LIFE SCIENCES PULSE FUND, LLC

By: /s/ Jonathan Goodman
Name: Jonathan Goodman
Title: General Counsel

SANDS CAPITAL GLOBAL VENTURE FUND II, L.P.

By: Sands Capital Global Venture Fund II-GP, L.P., Its General Partner

By: Sands Capital Global Venture Fund II-GP, LLC, Its General Partner

By: /s/ Jonathan Goodman
Name: Jonathan Goodman
Title: General Counsel

SANDS CAPITAL VENTURES DISCOVERY FUND III, L.P.

By: Sands Capital Ventures Discovery Fund III-GP, LLC, its general partner

By: /s/ Jonathan Goodman
Name: Jonathan Goodman
Title: General Counsel

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ David Summa
David Summa

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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INVESTOR:

/s/ Hans Utsch
Hans Utsch

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors’ Rights Agreement as of the date first written above.

INVESTOR:

VALINCO INVESTMENTS LIMITED

By: /s/ A.H.D. Weldon
Name: A.H.D. Weldon
Title: Director

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS’ RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Spencer Wheeler

Spencer Wheeler

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

/s/ Wm Matthew Zuga

Wm Matthew Zuga

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

MIDDLELAND ENDOWMENT I, LLC

By: /s/ Arthur X. Duffy
Name: Arthur X. Duffy
Title: Manager

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTOR:

DALTON TRUST - 1995

By: /s/ David P. Mixer
Name: David P. Mixer
Title: Trustee

SIGNATURE PAGE TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

SCHEDULE A

INVESTORS

Joseph Andrasko
427 Park Street
Charlottesville, VA 22902

Apple Tree Partners, LLC
wmthompson@wmtpc.com

Arrochar Investments LLC
4626 Slam Gate Road
Crozet, VA 22932

Bannon Multi-Manager Private Equity Fund Ltd
hg@arthurbellcpas.com

Berkshire Investment Management Ltd.
hvc@berkshire.net

Biotechnology Value Fund II, LP
One Sansome Street, 30th Floor
San Francisco, CA 94104

Biotechnology Value Fund, LP
One Sansome Street, 30th Floor
San Francisco, CA 94104

BlackRock Health Sciences Trust
40 East 52nd St.
New York, NY 10022

BlackRock Health Sciences Trust II
40 East 52nd St.
New York, NY 10022

Blackwell Partners LLC – Series A
280 S. Mangum Street
Suite 210
Durham, NC 27701
Attn: Jannine Lall

Frank A. Bonsal, Jr
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Reisterstown, MD 21136

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nmillman@brownadvisory.com

Robert Burt
roburt130@gmail.com

Alex Casdin
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Charlottesville Area Community Foundation
jdorman@cacfonline.org

Cleland Family III, LLC
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Commodity Investment Fund LLC
js@greshamllc.com

Dalton Trust – 1995
investments@rexcapital.com

Terrence D. Daniels
259 Yellow Mountain Rd.
Greenwood, VA 22943

Terrence D. Daniels 2008 Children’s Trust
259 Yellow Mountain Rd.
Greenwood, VA 22943

Terrence D. Daniels 2010 Grandchildren’s Trust
259 Yellow Mountain Rd.
Greenwood, VA 22943

Tim Davis
224 Court Square
Charlottesville, VA 22902

DLNGR PE LLC
dickvento@gmail.com

Dyson Capital Advisors, LLC
201 N. Union Street
Suite 300
Alexandria, VA 22314

Eugene V. Fife Revocable Trust dtd April 24, 2002
2421 Ivy Road, Suite 140
Charlosttesville, VA 22902

Caleb Finch
2144 Crescent Drive
Altadena, CA 91001

Four Pines Master Fund LP
c/o Rock Springs Capital Management LP
650 S Exeter Street Suite 1070 Baltimore, MD 21210 Attn: General Counsel
jill@rockspringscapital.com;
daphne@rockspringscapital.com;
ops@rockspringscapital.com

General Practitioner, LLC
cingoe@redabbey.com

Glynn Family Trust
Glynn Capital Management
3000 Sand Hill Road
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Menlo Park, CA, 94025
Attn: John Glynn

Glynn Investment Company, LLC
johnglynn@glynncapital.com

Philip Goelet
4000 Millender Mill Road Reisterstown, MD 21136

H7 Holdings LLC
210 Ridge McIntire Road
Suite 350
Charlottesville, VA, 22903

Alan G. Hassenfeld 1998 Rev. Trust DTD 4/28/1998
101 Dyer Street, Suite 401
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alan@hassenfeldfamily.com

Franz Hefti
20 East 74th Street, 14F
New York, NY 10021

Investment 10, LLC
One Sansome Street, 30th Floor
San Francisco, CA 94104

Mark J. Kington & Ann Kington TBE
c/o Dyson Capital Advisors, LLC 201 N. Union Street
Suite 300
Alexandria, VA 22314

Knollwood Investment Fund LLC
217 International Circle
Hunt Valley, MD 21030

Kolinina Limited
22 Stasikratous Street, Suite 103 - 104, PO Box 23664, 1685 Nicosia - Cyprus

Marc D. Kozin Irrevocable Trust, Donna M. Kozin, Trustee
16876 Brightling Way
Naples, FL 34110

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Level One Partners, LLC
210 Ridge McIntire Road, Suite 350
Charlottesville, VA, 22903

Lynch 1995 Gift Trust dtd 3/31/95
lynchbill@comcast.net

Edward Meigs
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MGE LLC
nicholas.perrins@dysoncapital.co m

Middleland Endowment I, LLC
c/o Rex Capital Partners
50 Park Row West, Suite 113
Providence, RI 02903

David V Milligan Trust Dated Oct 19, 1991
775 S. Green Bay Rd.
Lake Forest, IL 60045

The David V. Milligan Trust dated October 19, 1992
milligad@me.com

The David V. Milligan Trust dated October 19, 1993
milligad@me.com

MRW Blind Trust
c/o Dyson Capital Advisors, LLC
201 N. Union Street
Suite 300
Alexandria, VA 22314

James B. Murray, Jr. Revocable Trust U/A/D 8/5/1991
427 Park Street
Charlottesville, VA 22902
Attn: James B. Murray, Jr.

NeuroVentures Capital LLC
djo@neuroventures.com

Walter M. Noel, Jr.
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Steven M Paul
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Charlottesville, VA 22902

PBM ACU Holdings II, LLC
200 Garrett Street, Suite O
Charlottesville, VA 22902

Per Eric Krafft
pille.krafft@gmail.com

Praxis Technologies L.P.
427 Park Street Charlottesville, VA 22902 Attn: James B. Murray, Jr.

Protective Insurance Company Inc.
mmcneill@protectiveinsurance.co m

R3 Capital Strategies, LLC
rbrown@r3capitalstrategies.com

RA Capital Healthcare Fund GP, LLC
c/o RA Capital Management, L.P.
200 Berkeley Street
18th Floor
Boston, MA 02116
Attn: General Counsel

RA Capital Nexus Fund II, L.P.
c/o RA Capital Management, L.P. 200 Berkeley Street 18th Floor
Boston, MA 02116
Attn: General Counsel

Dru Rasmussen
224 Court Square Charlottesville, VA 22902

Rock Springs Capital Master Fund LP
c/o Rock Springs Capital Management LP
650 S Exeter Street Suite 1070 Baltimore, MD 21210 Attn: General Counsel
jill@rockspringscapital.com;
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Sands Capital Global Venture Fund II, L.P.
1000 Wilson Blvd, Suite 3000
Arlington, VA 22209 esoule@sandscap.com

Sands Capital Life Sciences Pulse Fund, LLC
1000 Wilson Blvd, Suite 3000
Arlington, VA 22209 esoule@sandscap.com

Sands Capital Ventures Discovery Fund III, L.P.
1000 Wilson Blvd, Suite 3000 Arlington, VA 22209 esoule@sandscap.com

David Summa
250 Brentwood Rd.
Hillsborough, CA 94010

Hans Utsch
hansutsch@gmail.com

Valinco Investments Limited
No. 29 Middle Road, Devonshire
DV 02, Bermuda

Weber Altman Living Trust
5911 Buena Vista Ave.
Oakland, CA 94618

R. Ted Weschler
rtw@pencapital.com

Spencer Wheeler
1512 Rutledge Avenue
Charlottesville, VA 22903

Z^2 Ventures LLC
marc@buntaine.com

Wm Matthew Zuga
matt.zuga@highcape.com

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** (the "***Agreement***") is entered into effective **January 1, 2021** (the "***Effective Date***"), by and between **Daniel J. O'Connell** (the "***Executive***") and **Acumen Pharmaceuticals, Inc.** (the "***Company***") and supersedes and replaces any prior consulting agreement or employment letter between the Parties and any of their affiliates.

WHEREAS, the Company desires to employ Executive and, in connection therewith, to compensate Executive for Executive's personal services to the Company; and

WHEREAS, Executive wishes to be employed by the Company and provide personal services and certain covenants to the Company in return for certain compensation and benefits.

Accordingly, in consideration of the mutual promises and covenants contained herein, the parties agree to the following:

1. EMPLOYMENT BY THE COMPANY.

1.1 Position. Subject to the terms set forth herein, the Company agrees to employ Executive, in the position of **President and Chief Executive Officer**, and Executive hereby accepts such employment. During the term of Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all of his business time and attention to the business of the Company.

1.2 Duties. Executive will initially report to the Board of Directors **("Board")** of the Company. Executive shall perform his duties under this Agreement initially principally out of his personal residence and the Company's corporate office in Charlottesville, VA or such other location as assigned by the Company. In addition, Executive shall make business trips to such places as may be necessary or advisable for the efficient operations of the Company, including visits to the Company's offices in Carmel, IN.

1.3 Company Policies and Benefits. The employment relationship between the parties shall also be subject to the Company's personnel policies and procedures as they may be interpreted, adopted, revised or deleted from time to time in the Company's sole discretion. Executive will be eligible to participate on the same basis as similarly situated employees in the Company's benefit plans in effect from time to time during Executive's employment. All matters of eligibility for coverage or benefits under any benefit plan shall be determined in accordance with the provisions of the such plan. The Executive shall be entitled to paid vacation in accordance with the plans, policies, programs and practices of the Company applicable to its senior executives in effect from time to time, but in no event shall the Executive be entitled to less than four (4) weeks of vacation per calendar year (pro-rated for any partial year of service). The Company reserves the right to change, alter, or terminate any benefit plan in its sole discretion. Notwithstanding the foregoing, in the event that the terms of this Agreement differ from or are in conflict with the Company's general employment policies or practices, this Agreement shall control.

2. <u>COMPENSATION</u>.

2.1 <u>Salary</u>. Executive shall receive for services to be rendered hereunder an initial base salary of $ 512,000.00 on annualized basis, subject to review and adjustment from time to time by the Board, and payable subject to standard federal and state payroll withholding requirements in accordance with the Company's standard payroll practices ("***Base Salary***").

2.2 <u>Annual Discretionary Bonus</u>. Executive shall be eligible for a discretionary annual calendar year performance bonus (the "***Annual Bonus***") with an annual target of fifty percent (50%) of Executive's then-current Base Salary (the "***Target Amount***"). Whether or not Executive is eligible for any Annual Bonus will be dependent upon the actual achievement by Executive and the Company of the applicable individual and corporate performance goals, as determined by the Board. No amount of any Annual Bonus is guaranteed at any time and may be greater or lesser than the Target Amount and may be zero. Any Annual Bonus, if awarded, will be paid in a single installment paid at the same time annual bonuses are generally paid to other similarly-situated employees of the Company and in any event no later than March 1st of the calendar year following the calendar year to which the Annual Bonus is applicable, and will be subject to deductions and withholdings. Executive's eligibility for an Annual Bonus and the Target Amount, if any, is subject to change in the discretion of the Board (or any authorized committee thereof).

2.3 <u>Expense Reimbursement</u>. The Company will reimburse Executive for reasonable business expenses in accordance with the Company's standard expense reimbursement policy, as the same may be modified by the Board from time to time. The Company shall reimburse Executive for all customary and appropriate business-related expenses actually incurred and documented in accordance with Company policy, as in effect from time to time . For the avoidance of doubt, to the extent that any reimbursements payable to Executive are subject to the provisions of Section 409A of the Internal Revenue Code of 1986, as amended (the "***Code***"): (a) any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, (b) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (c) the right to reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

2.4 <u>Stock Option</u>. Subject to approval by the Board, the Company anticipates granting to Executive an option to purchase 1,767,656 shares of the Company's common stock at the fair market value as determined by the Board as of the date of grant (the "***Option***"). The anticipated Option will be governed by the terms and conditions of the Company's Equity Incentive Plan (the "***Plan***") and the option grant agreement, and will vest 25% on the one-year anniversary of the date of grant, and thereafter over the ensuing 3 years in a series of thirty-six (36) successive equal monthly installments, subject to your Continuous Service (as defined in the Plan) as of each such date.

3. <u>CONFIDENTIAL INFORMATION, INVENTIONS, NON-COMPETITION AND NON-SOLICITATION OBLIGATIONS</u>. As a condition of employment, Executive agrees to execute and abide by the Employee Confidential Information, Inventions, Non-Solicitation and Non-Competition Agreement, attached as **Exhibit A** which may be amended by the parties from time

to time without regard to this Agreement (the "***Confidential Information Agreement***"). The Confidential Information Agreement contains provisions that are intended by the parties to survive and do survive termination of this Agreement.

4. <u>Outside Activities During Employment</u>. Except with the prior written consent of the Company, Executive will not, while employed by the Company, undertake or engage in any other employment, occupation or business enterprise that would interfere with Executive's responsibilities and the performance of Executive's duties hereunder except for (i) reasonable time devoted to volunteer services for or on behalf of such religious, educational, non-profit and/or other charitable organization as Executive may wish to serve, (ii) reasonable time devoted to activities in the non-profit and business communities consistent with Executive's duties; and (iii) such other activities as may be specifically approved in writing by the Company. Company hereby acknowledges consent's to Executive's existing Executive Chairman position at Direct Spinal Therapeutics, Inc. and deems that it complies with this Section 4.

5. <u>No Conflict with Existing Obligations</u>. Executive represents that Executive's performance of all the terms of this Agreement and as an Executive of the Company do not and will not breach any agreement or obligation of any kind made prior to Executive's employment by the Company, including agreements or obligations Executive may have with prior employers or entities for which Executive has provided services. Executive has not entered into, and Executive agrees that Executive will not enter into, any agreement or obligation, either written or oral, in conflict herewith.

6. <u>Termination Of Employment</u>. The parties acknowledge that Executive's employment relationship with the Company is at-will. Either Executive or the Company may terminate the employment relationship for any reason whatsoever at any time, with or without Cause or advance notice. The provisions in this Section govern the amount of compensation, if any, to be provided to Executive upon termination of employment and do not alter this at-will status.

6.1 <u>Termination by the Company without Cause or Resignation by Executive for Good Reason</u>.

(a) The Company shall have the right to terminate Executive's employment with the Company pursuant to this Section 6.1 at any time without Cause (as defined in Section 6.2(b) below) by giving notice as described in Section 7.1 of this Agreement. A termination pursuant to Section 6.4 or 6.5 below is not a termination without Cause for purposes of receiving the benefits described in this Section 6.1.

(b) In the event the Company terminates Executive's employment without Cause or Executive Resigns for Good Reason (as defined in Section 6.1(g) below), and provided that such termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "***Separation from Service***"), then Executive shall be entitled to receive the Accrued Obligations (as defined below) and, subject to Executive's compliance with the obligations in Section 6.1(c)

below, Executive shall be eligible to receive the following severance benefits (the "***Severance Benefits***"):

(i) The Company will pay Executive an amount equal to Executive's then current Base Salary for twelve (12) months, less all applicable withholdings and deductions, and paid in equal installments beginning on the Company's second regularly scheduled payroll date following the Release Effective Date (as defined in Section 6.1(c) below), with the remaining installments occurring on the Company's regularly scheduled payroll dates thereafter.

(ii) If Executive timely elects continued coverage under COBRA for Executive and Executive's dependents under the Company's group health plans following such termination, then the Company shall pay the COBRA premiums necessary to continue Executive's and his covered dependents' health insurance coverage in effect for Executive (and Executive's covered dependents) on the termination date until the earliest of: (i) twelve (12) months following the termination date (the "***COBRA Severance Period***"); (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment; or (iii) the date Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination (such period from the termination date through the earlier of (i)-(iii), (the "***COBRA Payment Period***"). Notwithstanding the foregoing, if at any time the Company determines that its payment of COBRA premiums on Executive's behalf would result in a violation of applicable law (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of paying COBRA premiums pursuant to this Section, the Company shall pay Executive on the last day of each remaining month of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premium for such month, subject to applicable tax withholding, for the remainder of the COBRA Payment Period. Nothing in this Agreement shall deprive Executive of his rights under COBRA or ERISA for benefits under plans and policies arising under his employment by the Company.

(c) Executive will be paid all of the Accrued Obligations (as defined in Section 6.1(d) below) on the Company's first payroll date after Executive's date of termination from employment or earlier if required by law. If eligible to receive the Severance Benefits pursuant to Section 6.1(b) of this Agreement, Executive will only receive such Severance Benefits if: (i) within the time period provided in the separation agreement (which shall be no longer than 60 days following the date of Executive's Separation from Service), Executive has signed and delivered to the Company a separation agreement that includes, among other terms, an effective general release of claims in favor of the Company and its affiliates and representatives, in the form presented by the Company (the "***Release***"), which cannot be revoked in whole or part by such date (the date that the Release can no longer be revoked is referred to as the "***Release Effective Date***"); and (ii) if Executive holds any other positions with the Company, he resigns such position(s) to be effective no later than the date of Executive's termination date (or such other date as requested by the Board); (iii) Executive returns all Company property; (iv) Executive complies with his post-termination obligations under this Agreement and the Confidential Information Agreement; and (v) Executive complies with the terms of the Release, including, without limitation, any non-disparagement, confidentiality and cooperation provisions contained in Release.

(d) For purposes of this Agreement, "***Accrued Obligations***" are (i) Executive's accrued but unpaid salary through the date of termination, (ii) any unreimbursed business expenses incurred by Executive payable in accordance with the Company's standard expense reimbursement policies, and (iii) benefits owed to Executive under any qualified retirement plan or health and welfare benefit plan in which Executive was a participant in accordance with applicable law and the provisions of such plan.

(e) The Severance Benefits provided to Executive pursuant to this Section 6.1 are in lieu of, and not in addition to, any benefits to which Executive may otherwise be entitled under any Company severance plan, policy or program.

(f) Any damages caused by the termination of Executive's employment without Cause would be difficult to ascertain; therefore, the Severance Benefits for which Executive is eligible pursuant to Section 6.1(b) above in exchange for the Release is agreed to by the parties as liquidated damages, to serve as full compensation, and not a penalty.

(g) "***Good Reason***" for purposes of this Agreement shall mean the occurrence of any of the following conditions without Executive's consent, after Executive's provision of written notice to the Company of the existence of such condition (which notice must be provided as described in Section 7.1 within thirty (30) days of the initial existence of the condition and must specify the particular condition in reasonable detail), provided that the Company has not first provided notice to Executive of its intent to terminate Executive's employment: (i) a material reduction in Executive's duties, responsibilities or authorities, provided, however, that neither the conversation of the Company to a subsidiary, division or unit of an acquiring entity, or Executive's reporting relationships following a Change in Control, nor a change in title, will be deemed a "material reduction" in and of itself or material adverse alteration in, Executive's position, title, duties, or responsibilities; (ii) a material (greater than 10%) reduction by the Company of Executive's Base Salary (except in the case of either an across the board reduction in salaries or a temporary reduction due to financial exigency); or (iii) the relocation of Executive's principal place of employment by fifty (50) or more miles from Executive's then-current principal place of employment. Notwithstanding the foregoing, Good Reason shall only exist if the Company is provided a thirty (30) day period to cure the event or condition giving rise to Good Reason, and it fails to do so within that cure period (and, additionally, Executive must resign for such Good Reason condition by giving notice as described in Section 7.1 within thirty (30) days after the period for curing the violation or condition has ended).

6.2 <u>Termination by the Company for Cause</u>.

(a) The Company shall have the right to terminate Executive's employment with the Company at any time for Cause by giving notice as described in Section 7.1 of this Agreement.

(b) "Cause" for purposes of this Agreement shall mean that the Company has determined in its sole discretion that Executive has engaged in any of the following: (i) a material breach of any covenant or condition under this Agreement or any other agreement between the Company and Executive; (ii) any act constituting dishonesty, fraud, immoral or

disreputable conduct; (iii) any conduct which constitutes a felony under applicable law; (iv) violation of any Company policy or any act of misconduct; (v) refusal to follow or implement a clear and reasonable directive of Company; (vi) negligence or incompetence in the performance of Executive’s duties or failure to perform such duties in a manner satisfactory to the Company after the expiration of ten (10) days without cure after written notice of such failure; (vii) failure to pass to the satisfaction of the Company, a preliminary background check or failure to submit proof of legal eligibility to work in the United States; or (viii) breach of fiduciary duty.

(c) In the event Executive’s employment is terminated at any time for Cause, Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company’s standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.3 <u>Resignation by Executive (other than for Good Reason)</u>.

(a) Executive may resign from Executive’s employment with the Company at any time by giving notice as described in Section 7.1.

(b) In the event Executive resigns from Executive’s employment with the Company (other than for Good Reason), Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company’s standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.4 <u>Termination by Virtue of Death or Disability of Executive</u>.

(a) In the event of Executive’s death while employed pursuant to this Agreement, all obligations of the parties hereunder shall terminate immediately, and the Company shall, pursuant to the Company’s standard payroll policies, provide to Executive’s legal representatives Executive’s accrued but unpaid salary through the date of death together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

(b) Subject to applicable state and federal law, the Company shall at all times have the right, upon written notice to Executive, to terminate this Agreement based on Executive’s Disability (as defined below). Termination by the Company of Executive’s employment based on “***Disability***” shall mean termination because Executive is unable due to a physical or mental condition to perform the essential functions of Executive’s position with or without reasonable accommodation for one hundred twenty (120) consecutive calendar days or six (6) months in the aggregate during any twelve (12) month period or based on the written certification by two licensed physicians of the likely continuation of such condition for such period. This definition shall be interpreted and applied consistent with the Americans with Disabilities Act, the Family and Medical Leave Act, and other applicable law. In the event Executive’s employment is terminated based on Executive’s Disability, Executive will not receive the Severance Benefits, or any other severance compensation or benefit, except that, pursuant to the Company’s standard payroll policies, the Company shall pay to Executive the accrued but unpaid salary of Executive through the date of termination, together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

6.5 **[RESERVED]**

6.6 **Notice; Effective Date of Termination**.

(a) Termination of Executive's employment pursuant to this Agreement shall be effective on the earliest of:

(i) immediately after the Company gives notice to Executive of Executive's termination, with or without Cause, unless pursuant to Section 6.2(b)(vi) in which case ten (10) days after notice if not cured or unless the Company specifies a later date, in which case, termination shall be effective as of such later date;

(ii) immediately upon Executive's death;

(iii) ten (10) days after the Company gives notice to Executive of Executive's termination on account of Executive's Disability, unless the Company specifies a later date, in which case, termination shall be effective as of such later date, *provided* that Executive has not returned to the full time performance of Executive's duties prior to such date;

(iv) ten (10) days after Executive gives written notice to the Company of Executive's resignation, *provided* that the Company may set a termination date at any time between the date of notice and the date of resignation, in which case Executive's resignation shall be effective as of such other date. Executive will receive compensation through any required notice period; or

(v) for a termination for Good Reason, immediately upon Executive's full satisfaction of the requirements of Section 6.1(g).

(b) In the event notice of a termination under subsections (a)(i) and (iii) is given orally, at the other party's request, the party giving notice must provide written confirmation of such notice within five (5) business days of the request in compliance with the requirement of Section 7.1 below. In the event of a termination for Cause, written confirmation shall specify the subsection(s) of the definition of Cause relied on to support the decision to terminate.

6.7 **Cooperation With Company After Termination of Employment**. Following termination of Executive's employment for any reason, Executive shall fully cooperate with the Company in all matters relating to the winding up of Executive's pending work including, but not limited to, any litigation in which the Company is involved, and the orderly transfer of any such pending work to such other employees as may be designated by the Company. The Company will reimburse Executive for reasonable out-of-pocket expenses Executive incurs in connection with any such cooperation (excluding forgone wages, salary, or other compensation) and will make reasonable efforts to accommodate Executive's scheduling needs.

6.8 Application of Section 409A. It is intended that all of the benefits and payments under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A of the Code provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions. If not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A of the Code, and incorporates by reference all required definitions and payment terms. For purposes of Section 409A of the Code (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) will be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder will at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of his Separation from Service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code, and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation", then if delayed commencement of any portion of such payments is required to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code and the related adverse taxation under Section 409A of the Code, the timing of the payments upon a Separation from Service will be delayed as follows: on the earlier to occur of (i) the date that is six months and one day after the effective date of Executive's Separation from Service, and (ii) the date of Executive's death (such earlier date, the "***Delayed Initial Payment Date***"), the Company will (A) pay to Executive a lump sum amount equal to the sum of the payments upon Separation from Service that Executive would otherwise have received through the Delayed Initial Payment Date if the commencement of the payments had not been delayed pursuant to this paragraph, and (B) commence paying the balance of the payments in accordance with the applicable payment schedules set forth above. No interest will be due on any amounts so deferred.

7. GENERAL PROVISIONS.

7.1 Notices. Any notices required hereunder to be in writing shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by electronic mail or confirmed facsimile if sent during normal business hours of the recipient, and if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the Company at its primary office location and to Executive at Executive's address as listed on the Company payroll or to Executive's Company-issued email address or Executive's email address as listed in Company records, or at such other address as the Company or Executive may designate by ten (10) days advance written notice to the other.

7.2 Severability. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

7.3 **Survival**. Provisions of this Agreement which by their terms must survive the termination of this Agreement in order to effectuate the intent of the parties will survive any such termination, whether by expiration of the term, termination of Executive's employment, or otherwise, for such period as may be appropriate under the circumstances.

7.4 **Waiver**. If either party should waive any breach of any provisions of this Agreement, it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

7.5 **Complete Agreement**. This Agreement constitutes the entire agreement between Executive and the Company with regard to the subject matter hereof. This Agreement is the complete, final, and exclusive embodiment of their agreement with regard to this subject matter and supersedes any prior oral discussions or written communications and agreements. This Agreement is entered into without reliance on any promise or representation other than those expressly contained herein, and it cannot be modified or amended except in writing signed by Executive and an authorized officer of the Company. The parties have entered into a separate Confidential Information Agreement and have or may enter into separate agreements related to equity. These separate agreements govern other aspects of the relationship between the parties, have or may have provisions that survive termination of Executive's employment under this Agreement, may be amended or superseded by the parties without regard to this Agreement and are enforceable according to their terms without regard to the enforcement provision of this Agreement.

7.6 **Counterparts**. This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but all of which taken together will constitute one and the same Agreement.

7.7 **Headings**. The headings of the sections hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

7.8 **Successors and Assigns**. The Company shall assign this Agreement and its rights and obligations hereunder in whole, but not in part, to any Company or other entity with or into which the Company may hereafter merge or consolidate or to which the Company may transfer all or substantially all of its assets, if in any such case said Company or other entity shall by operation of law or expressly in writing assume all obligations of the Company hereunder as fully as if it had been originally made a party hereto, but may not otherwise assign this Agreement or its rights and obligations hereunder. Executive may not assign or transfer this Agreement or any rights or obligations hereunder, other than to Executive's estate upon Executive's death.

7.9 **Choice of Law**. All questions concerning the construction, validity and interpretation of this Agreement will be governed by the law of the Commonwealth of Virginia.

7.10 <u>Resolution of Disputes</u>. The parties recognize that litigation in federal or state courts or before federal or state administrative agencies of disputes arising out of Executive's employment with the Company or out of this Agreement, or Executive's termination of employment or termination of this Agreement, may not be in the best interests of either Executive or the Company, and may result in unnecessary costs, delays, complexities, and uncertainty. The parties agree that any dispute between the parties arising out of or relating to the negotiation, execution, performance or termination of this Agreement or Executive's employment, including, but not limited to, any claim arising out of this Agreement, claims under Title VII of the Civil Rights Act of 1964, as amended, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, Section 1981 of the Civil Rights Act of 1966, as amended, the Family Medical Leave Act, the Executive Retirement Income Security Act, and any similar federal, state or local law, statute, regulation, or any common law doctrine, whether that dispute arises during or after employment, shall be settled by binding arbitration in accordance with the Employment Arbitration Rules and Mediation Procedures of the American Arbitration Association; *provided however,* that this dispute resolution provision shall not apply to any separate agreements between the parties that do not themselves specify arbitration as an exclusive remedy. The location for the arbitration shall be the Charlottesville, Virginia area. Any award made by such panel shall be final, binding and conclusive on the parties for all purposes, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators' fees and expenses and all administrative fees and expenses associated with the filing of the arbitration shall be borne by the Company; *provided however*, that at Executive's option, Executive may voluntarily pay up to one-half the costs and fees. The parties acknowledge and agree that their obligations to arbitrate under this Section survive the termination of this Agreement and continue after the termination of the employment relationship between Executive and the Company. The parties each further agree that the arbitration provisions of this Agreement shall provide each party with its **exclusive remedy**, and each party expressly waives any right it might have to seek redress in any other forum, except as otherwise expressly provided in this Agreement. By election arbitration as the means for final settlement of all claims, **the parties hereby waive their respective rights to, and agree not to, sue each other in any action in a Federal, State or local court with respect to such claims, but may seek to enforce in court an arbitration award rendered pursuant to this Agreement. The parties specifically agree to waive their respective rights to a trial by jury, and further agree that no demand, request or motion will be made for trial by jury**.

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties have executed this Employment Agreement on the day and year written below effective as of the Effective Date (as defined herein).

Acumen Pharmaceuticals, Inc.

By: /s/ Sean Stalfort

Sean Stalfort, Chairman

Executive:

/s/ Daniel O'Connell

Daniel O'Connell

January 15, 2021

Date

Exhibit 10.8

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** (the "***Agreement***") is entered into effective **January 1, 2021** (the "***Effective Date***"), by and between **Eric Siemers, MD** (the "***Executive***") and **Acumen Pharmaceuticals, Inc.** (the "***Company***") and supersedes and replaces any prior consulting agreement or employment letter between the Parties and any of their affiliates.

WHEREAS, the Company desires to employ Executive and, in connection therewith, to compensate Executive for Executive's personal services to the Company; and

WHEREAS, Executive wishes to be employed by the Company and provide personal services and certain covenants to the Company in return for certain compensation and benefits.

Accordingly, in consideration of the mutual promises and covenants contained herein, the parties agree to the following:

1. EMPLOYMENT BY THE COMPANY.

1.1 Position. Subject to the terms set forth herein, the Company agrees to employ Executive, in the position of **Chief Medical Officer**, and Executive hereby accepts such employment. During the term of Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all (at least eighty-percent) of his business time and attention to the business of the Company.

1.2 Duties. Executive will initially report to the Chief Executive Officer (the "**CEO**") of the Company. Executive shall perform his duties under this Agreement initially principally out of his personal residence and the Company's corporate offices in Carmel, IN or such other location as assigned by the Company. In addition, Executive shall make business trips to such places as may be necessary or advisable for the efficient operations of the Company.

1.3 Company Policies and Benefits. The employment relationship between the parties shall also be subject to the Company's personnel policies and procedures as they may be interpreted, adopted, revised or deleted from time to time in the Company's sole discretion. Executive will be eligible to participate on the same basis as similarly situated employees in the Company's benefit plans in effect from time to time during Executive's employment. All matters of eligibility for coverage or benefits under any benefit plan shall be determined in accordance with the provisions of the such plan. The Executive shall be entitled to paid vacation in accordance with the plans, policies, programs and practices of the Company applicable to its senior executives in effect from time to time, but in no event shall the Executive be entitled to less than four (4) weeks of vacation per calendar year (pro-rated for any partial year of service). The Company reserves the right to change, alter, or terminate any benefit plan in its sole discretion. Notwithstanding the foregoing, in the event that the terms of this Agreement differ from or are in conflict with the Company's general employment policies or practices, this Agreement shall control.

2. <u>Compensation</u>.

2.1 <u>Salary</u>. Executive shall receive for services to be rendered hereunder an initial base salary of $ 332,000.00 on annualized basis, subject to review and adjustment from time to time by the Company, and payable subject to standard federal and state payroll withholding requirements in accordance with the Company's standard payroll practices ("***Base Salary***").

2.2 <u>Annual Discretionary Bonus</u>. Executive shall be eligible for a discretionary annual calendar year performance bonus (the "***Annual Bonus***") with an annual target of forty percent (40%) of Executive's then-current Base Salary (the "***Target Amount***"). Whether or not Executive is eligible for any Annual Bonus will be dependent upon the actual achievement by Executive and the Company of the applicable individual and corporate performance goals, as determined by the Board. No amount of any Annual Bonus is guaranteed at any time and may be greater or lesser than the Target Amount and may be zero. Any Annual Bonus, if awarded, will be paid in a single installment paid at the same time annual bonuses are generally paid to other similarly-situated employees of the Company and in any event no later than March 1st of the calendar year following the calendar year to which the Annual Bonus is applicable, and will be subject to deductions and withholdings. Executive's eligibility for an Annual Bonus and the Target Amount, if any, is subject to change in the discretion of the Board (or any authorized committee thereof).

2.3 <u>Expense Reimbursement</u>. The Company will reimburse Executive for reasonable business expenses in accordance with the Company's standard expense reimbursement policy, as the same may be modified by the Board from time to time. The Company shall reimburse Executive for all customary and appropriate business-related expenses actually incurred and documented in accordance with Company policy, as in effect from time to time. For the avoidance of doubt, to the extent that any reimbursements payable to Executive are subject to the provisions of Section 409A of the Internal Revenue Code of 1986, as amended (the "***Code***"): (a) any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, (b) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (c) the right to reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

2.4 <u>Stock Option</u>. Subject to approval by the Board, the Company anticipates granting to Executive an option to purchase 463,374 shares of the Company's common stock at the fair market value as determined by the Board as of the date of grant (the "***Option***"). The anticipated Option will be governed by the terms and conditions of the Company's Equity Incentive Plan (the "***Plan***") and the option grant agreement, and will vest 25% on the one-year anniversary of the date of grant, and thereafter over the ensuing 3 years in a series of thirty-six (36) successive equal monthly installments, subject to your Continuous Service (as defined in the Plan) as of each such date.

3. <u>Confidential Information, Inventions, Non-Competition and Non- Solicitation Obligations</u>. As a condition of employment, Executive agrees to execute and abide by the Employee Confidential Information, Inventions, Non-Solicitation and Non-

Competition Agreement, attached as **Exhibit A** which may be amended by the parties from time to time without regard to this Agreement (the "***Confidential Information Agreement***"). The Confidential Information Agreement contains provisions that are intended by the parties to survive and do survive termination of this Agreement.

4. OUTSIDE ACTIVITIES DURING EMPLOYMENT. Except with the prior written consent of the Company, Executive will not, while employed by the Company, undertake or engage in any other employment, occupation or business enterprise that would interfere with Executive's responsibilities and the performance of Executive's duties hereunder except for (i) reasonable time devoted to volunteer services for or on behalf of such religious, educational, non-profit and/or other charitable organization as Executive may wish to serve, (ii) reasonable time devoted to activities in the non-profit and business communities consistent with Executive's duties; and (iii) such other activities as may be specifically approved in writing by the Company. [***Company hereby acknowledges and consents to Executive's existing positions at other companies including but not limited to Cogstate Ltd. and Vaccinex Inc. Executive agrees that these outside activities will be adjusted as quickly as possible in order to comply with the terms of this Agreement.***]

5. NO CONFLICT WITH EXISTING OBLIGATIONS. Executive represents that Executive's performance of all the terms of this Agreement and as an Executive of the Company do not and will not breach any agreement or obligation of any kind made prior to Executive's employment by the Company, including agreements or obligations Executive may have with prior employers or entities for which Executive has provided services. Executive has not entered into, and Executive agrees that Executive will not enter into, any agreement or obligation, either written or oral, in conflict herewith.

6. TERMINATION OF EMPLOYMENT. The parties acknowledge that Executive's employment relationship with the Company is at-will. Either Executive or the Company may terminate the employment relationship for any reason whatsoever at any time, with or without Cause or advance notice. The provisions in this Section govern the amount of compensation, if any, to be provided to Executive upon termination of employment and do not alter this at-will status.

6.1 Termination by the Company without Cause or Resignation by Executive for Good Reason.

(a) The Company shall have the right to terminate Executive's employment with the Company pursuant to this Section 6.1 at any time without Cause (as defined in Section 6.2(b) below) by giving notice as described in Section 7.1 of this Agreement. A termination pursuant to Section 6.4 or 6.5 below is not a termination without Cause for purposes of receiving the benefits described in this Section 6.1.

(b) In the event the Company terminates Executive's employment without Cause or Executive Resigns for Good Reason (as defined in Section 6.1(g) below), and provided that such termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "***Separation from Service***"), then Executive shall be entitled to receive the Accrued Obligations

(as defined below) and, subject to Executive's compliance with the obligations in Section 6.1(c) below, Executive shall be eligible to receive the following severance benefits (the "***Severance Benefits***"):

(i) The Company will pay Executive an amount equal to Executive's then current Base Salary for six (6) months, less all applicable withholdings and deductions, and paid in equal installments beginning on the Company's second regularly scheduled payroll date following the Release Effective Date (as defined in Section 6.1(c) below), with the remaining installments occurring on the Company's regularly scheduled payroll dates thereafter.

(ii) If Executive timely elects continued coverage under COBRA for Executive and Executive's dependents under the Company's group health plans following such termination, then the Company shall pay the COBRA premiums necessary to continue Executive's and his covered dependents' health insurance coverage in effect for Executive (and Executive's covered dependents) on the termination date until the earliest of: (i) twelve (12) months following the termination date (the "***COBRA Severance Period***"); (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment; or (iii) the date Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination (such period from the termination date through the earlier of (i)-(iii), (the "***COBRA Payment Period***"). Notwithstanding the foregoing, if at any time the Company determines that its payment of COBRA premiums on Executive's behalf would result in a violation of applicable law (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of paying COBRA premiums pursuant to this Section, the Company shall pay Executive on the last day of each remaining month of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premium for such month, subject to applicable tax withholding, for the remainder of the COBRA Payment Period. Nothing in this Agreement shall deprive Executive of his rights under COBRA or ERISA for benefits under plans and policies arising under his employment by the Company.

(c) Executive will be paid all of the Accrued Obligations (as defined in Section 6.1(d) below) on the Company's first payroll date after Executive's date of termination from employment or earlier if required by law. If eligible to receive the Severance Benefits pursuant to Section 6.1(b) of this Agreement, Executive will only receive such Severance Benefits if: (i) within the time period provided in the separation agreement (which shall be no longer than 60 days following the date of Executive's Separation from Service), Executive has signed and delivered to the Company a separation agreement that includes, among other terms, an effective general release of claims in favor of the Company and its affiliates and representatives, in the form presented by the Company (the "***Release***"), which cannot be revoked in whole or part by such date (the date that the Release can no longer be revoked is referred to as the "***Release Effective Date***"); and (ii) if Executive holds any other positions with the Company, he resigns such position(s) to be effective no later than the date of Executive's termination date (or such other date as requested by the Board); (iii) Executive returns all Company property; (iv) Executive complies with his post-termination obligations under this Agreement and the Confidential Information Agreement; and (v) Executive complies with the terms of the Release, including, without limitation, any non-disparagement, confidentiality and cooperation provisions contained in Release.

(d) For purposes of this Agreement, ***"Accrued Obligations"*** are (i) Executive's accrued but unpaid salary through the date of termination, (ii) any unreimbursed business expenses incurred by Executive payable in accordance with the Company's standard expense reimbursement policies, and (iii) benefits owed to Executive under any qualified retirement plan or health and welfare benefit plan in which Executive was a participant in accordance with applicable law and the provisions of such plan.

(e) The Severance Benefits provided to Executive pursuant to this Section 6.1 are in lieu of, and not in addition to, any benefits to which Executive may otherwise be entitled under any Company severance plan, policy or program.

(f) Any damages caused by the termination of Executive's employment without Cause would be difficult to ascertain; therefore, the Severance Benefits for which Executive is eligible pursuant to Section 6.1(b) above in exchange for the Release is agreed to by the parties as liquidated damages, to serve as full compensation, and not a penalty.

(g) ***"Good Reason"*** for purposes of this Agreement shall mean the occurrence of any of the following conditions without Executive's consent, after Executive's provision of written notice to the Company of the existence of such condition (which notice must be provided as described in Section 7.1 within thirty (30) days of the initial existence of the condition and must specify the particular condition in reasonable detail), provided that the Company has not first provided notice to Executive of its intent to terminate Executive's employment: (i) a material reduction in Executive's duties, responsibilities or authorities, provided, however, that neither the conversation of the Company to a subsidiary, division or unit of an acquiring entity, or Executive's reporting relationships following a Change in Control, nor a change in title, will be deemed a "material reduction" in and of itself or material adverse alteration in, Executive's position, title, duties, or responsibilities; (ii) a material (greater than 10%) reduction by the Company of Executive's Base Salary (except in the case of either an across the board reduction in salaries or a temporary reduction due to financial exigency); or (iii) the relocation of Executive's principal place of employment by fifty (50) or more miles from Executive's then-current principal place of employment. Notwithstanding the foregoing, Good Reason shall only exist if the Company is provided a thirty (30) day period to cure the event or condition giving rise to Good Reason, and it fails to do so within that cure period (and, additionally, Executive must resign for such Good Reason condition by giving notice as described in Section 7.1 within thirty (30) days after the period for curing the violation or condition has ended).

6.2 Termination by the Company for Cause.

(a) The Company shall have the right to terminate Executive's employment with the Company at any time for Cause by giving notice as described in Section 7.1 of this Agreement.

(b) "Cause" for purposes of this Agreement shall mean that the Company has determined in its sole discretion that Executive has engaged in any of the following: (i) a material breach of any covenant or condition under this Agreement or any other agreement between the Company and Executive; (ii) any act constituting dishonesty, fraud, immoral or disreputable conduct; (iii) any conduct which constitutes a felony under applicable law; (iv) violation of any Company policy or any act of misconduct; (v) refusal to follow or implement a clear and reasonable directive of Company; (vi) negligence or incompetence in the performance of Executive's duties or failure to perform such duties in a manner satisfactory to the Company after the expiration of ten (10) days without cure after written notice of such failure; (vii) failure to pass to the satisfaction of the Company, a preliminary background check or failure to submit proof of legal eligibility to work in the United States; or (viii) breach of fiduciary duty.

(c) In the event Executive's employment is terminated at any time for Cause, Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company's standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.3 <u>Resignation by Executive (other than for Good Reason).</u>

(a) Executive may resign from Executive's employment with the Company at any time by giving notice as described in Section 7.1.

(b) In the event Executive resigns from Executive's employment with the Company (other than for Good Reason), Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company's standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.4 <u>Termination by Virtue of Death or Disability of Executive.</u>

(a) In the event of Executive's death while employed pursuant to this Agreement, all obligations of the parties hereunder shall terminate immediately, and the Company shall, pursuant to the Company's standard payroll policies, provide to Executive's legal representatives Executive's accrued but unpaid salary through the date of death together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

(b) Subject to applicable state and federal law, the Company shall at all times have the right, upon written notice to Executive, to terminate this Agreement based on Executive's Disability (as defined below). Termination by the Company of Executive's employment based on "***Disability***" shall mean termination because Executive is unable due to a physical or mental condition to perform the essential functions of Executive's position with or without reasonable accommodation for one hundred twenty (120) consecutive calendar days or six (6) months in the aggregate during any twelve (12) month period or based on the written certification by two licensed physicians of the likely continuation of such condition for such period. This definition shall be interpreted and applied consistent with the Americans with Disabilities Act, the Family and Medical Leave Act, and other applicable law. In the event Executive's employment is terminated based on Executive's Disability, Executive will not

receive the Severance Benefits, or any other severance compensation or benefit, except that, pursuant to the Company's standard payroll policies, the Company shall pay to Executive the accrued but unpaid salary of Executive through the date of termination, together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

6.5 <u>[RESERVED]</u>

6.6 <u>Notice; Effective Date of Termination.</u>

(a) Termination of Executive's employment pursuant to this Agreement shall be effective on the earliest of:

(i) immediately after the Company gives notice to Executive of Executive's termination, with or without Cause, unless pursuant to Section 6.2(b)(vi) in which case ten (10) days after notice if not cured or unless the Company specifies a later date, in which case, termination shall be effective as of such later date;

(ii) immediately upon Executive's death;

(iii) ten (10) days after the Company gives notice to Executive of Executive's termination on account of Executive's Disability, unless the Company specifies a later date, in which case, termination shall be effective as of such later date, *provided* that Executive has not returned to the full time performance of Executive's duties prior to such date;

(iv) ten (10) days after Executive gives written notice to the Company of Executive's resignation, *provided* that the Company may set a termination date at any time between the date of notice and the date of resignation, in which case Executive's resignation shall be effective as of such other date. Executive will receive compensation through any required notice period; or

(v) for a termination for Good Reason, immediately upon Executive's full satisfaction of the requirements of Section 6.1(g).

(b) In the event notice of a termination under subsections (a)(i) and (iii) is given orally, at the other party's request, the party giving notice must provide written confirmation of such notice within five (5) business days of the request in compliance with the requirement of Section 7.1 below. In the event of a termination for Cause, written confirmation shall specify the subsection(s) of the definition of Cause relied on to support the decision to terminate.

6.7 <u>Cooperation With Company After Termination of Employment</u>. Following termination of Executive's employment for any reason, Executive shall fully cooperate with the Company in all matters relating to the winding up of Executive's pending work including, but not limited to, any litigation in which the Company is involved, and the orderly transfer of any such pending work to such other employees as may be designated by the Company. The Company will reimburse Executive for reasonable out-of-pocket expenses Executive incurs in connection with any such cooperation (excluding forgone wages, salary, or other compensation) and will make reasonable efforts to accommodate Executive's scheduling needs.

6.8 <u>Application of Section 409A</u>. It is intended that all of the benefits and payments under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A of the Code provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions. If not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A of the Code, and incorporates by reference all required definitions and payment terms. For purposes of Section 409A of the Code (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) will be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder will at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of his Separation from Service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code, and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation", then if delayed commencement of any portion of such payments is required to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code and the related adverse taxation under Section 409A of the Code, the timing of the payments upon a Separation from Service will be delayed as follows: on the earlier to occur of (i) the date that is six months and one day after the effective date of Executive's Separation from Service, and (ii) the date of Executive's death (such earlier date, the "***Delayed Initial Payment Date***"***),*** the Company will (A) pay to Executive a lump sum amount equal to the sum of the payments upon Separation from Service that Executive would otherwise have received through the Delayed Initial Payment Date if the commencement of the payments had not been delayed pursuant to this paragraph, and (B) commence paying the balance of the payments in accordance with the applicable payment schedules set forth above. No interest will be due on any amounts so deferred.

7. <u>GENERAL PROVISIONS.</u>

7.1 <u>Notices</u>. Any notices required hereunder to be in writing shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by electronic mail or confirmed facsimile if sent during normal business hours of the recipient, and if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the Company at its primary office location and to Executive at Executive's address as listed on the Company payroll or to Executive's Company-issued email address or Executive's email address as listed in Company records, or at such other address as the Company or Executive may designate by ten (10) days advance written notice to the other.

7.2 <u>Severability</u>. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any

provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

7.3 Survival. Provisions of this Agreement which by their terms must survive the termination of this Agreement in order to effectuate the intent of the parties will survive any such termination, whether by expiration of the term, termination of Executive's employment, or otherwise, for such period as may be appropriate under the circumstances.

7.4 Waiver. If either party should waive any breach of any provisions of this Agreement, it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

7.5 Complete Agreement. This Agreement constitutes the entire agreement between Executive and the Company with regard to the subject matter hereof. This Agreement is the complete, final, and exclusive embodiment of their agreement with regard to this subject matter and supersedes any prior oral discussions or written communications and agreements. This Agreement is entered into without reliance on any promise or representation other than those expressly contained herein, and it cannot be modified or amended except in writing signed by Executive and an authorized officer of the Company. The parties have entered into a separate Confidential Information Agreement and have or may enter into separate agreements related to equity. These separate agreements govern other aspects of the relationship between the parties, have or may have provisions that survive termination of Executive's employment under this Agreement, may be amended or superseded by the parties without regard to this Agreement and are enforceable according to their terms without regard to the enforcement provision of this Agreement.

7.6 Counterparts. This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but all of which taken together will constitute one and the same Agreement.

7.7 Headings. The headings of the sections hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

7.8 Successors and Assigns. The Company shall assign this Agreement and its rights and obligations hereunder in whole, but not in part, to any Company or other entity with or into which the Company may hereafter merge or consolidate or to which the Company may transfer all or substantially all of its assets, if in any such case said Company or other entity shall by operation of law or expressly in writing assume all obligations of the Company hereunder as fully as if it had been originally made a party hereto, but may not otherwise assign this Agreement or its rights and obligations hereunder. Executive may not assign or transfer this Agreement or any rights or obligations hereunder, other than to Executive's estate upon Executive's death.

7.9 <u>Choice of Law</u>. All questions concerning the construction, validity and interpretation of this Agreement will be governed by the law of the State of Indiana.

7.10 <u>Resolution of Disputes</u>. The parties recognize that litigation in federal or state courts or before federal or state administrative agencies of disputes arising out of Executive's employment with the Company or out of this Agreement, or Executive's termination of employment or termination of this Agreement, may not be in the best interests of either Executive or the Company, and may result in unnecessary costs, delays, complexities, and uncertainty. The parties agree that any dispute between the parties arising out of or relating to the negotiation, execution, performance or termination of this Agreement or Executive's employment, including, but not limited to, any claim arising out of this Agreement, claims under Title VII of the Civil Rights Act of 1964, as amended, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, Section 1981 of the Civil Rights Act of 1966, as amended, the Family Medical Leave Act, the Executive Retirement Income Security Act, and any similar federal, state or local law, statute, regulation, or any common law doctrine, whether that dispute arises during or after employment, shall be settled by binding arbitration in accordance with the Employment Arbitration Rules and Mediation Procedures of the American Arbitration Association; *provided however*, that this dispute resolution provision shall not apply to any separate agreements between the parties that do not themselves specify arbitration as an exclusive remedy. The location for the arbitration shall be the Charlottesville, Virginia area. Any award made by such panel shall be final, binding and conclusive on the parties for all purposes, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators' fees and expenses and all administrative fees and expenses associated with the filing of the arbitration shall be borne by the Company; *provided however*, that at Executive's option, Executive may voluntarily pay up to one-half the costs and fees. The parties acknowledge and agree that their obligations to arbitrate under this Section survive the termination of this Agreement and continue after the termination of the employment relationship between Executive and the Company. The parties each further agree that the arbitration provisions of this Agreement shall provide each party with its **exclusive remedy**, and each party expressly waives any right it might have to seek redress in any other forum, except as otherwise expressly provided in this Agreement. By election arbitration as the means for final settlement of all claims, **the parties hereby waive their respective rights to, and agree not to, sue each other in any action in a Federal, State or local court with respect to such claims, but may seek to enforce in court an arbitration award rendered pursuant to this Agreement. The parties specifically agree to waive their respective rights to a trial by jury, and further agree that no demand, request or motion will be made for trial by jury.**

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties have executed this Employment Agreement on the day and year written below effective as of the Effective Date (as defined herein).

Acumen Pharmaceuticals, Inc.

By: /s/ Daniel J.O'Connell
Daniel J.O'Connell,
President and Chief Executive Officer

Executive:

/s/ Eric Siemers
Eric Siemers, MD

1/26/2021
Date

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** (the "***Agreement***") is entered into effective **January 1, 2021** (the "***Effective Date***"), by and between **Russell Barton** (the "***Executive***") and **Acumen Pharmaceuticals, Inc.** (the "***Company***") and supersedes and replaces any prior consulting agreement or employment letter between the Parties and any of their affiliates.

WHEREAS, the Company desires to employ Executive and, in connection therewith, to compensate Executive for Executive's personal services to the Company; and

WHEREAS, Executive wishes to be employed by the Company and provide personal services and certain covenants to the Company in return for certain compensation and benefits.

Accordingly, in consideration of the mutual promises and covenants contained herein, the parties agree to the following:

1. EMPLOYMENT BY THE COMPANY.

1.1 Position. Subject to the terms set forth herein, the Company agrees to employ Executive, in the position of **Chief Operations Officer**, and Executive hereby accepts such employment. During the term of Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all (at least eighty-percent) of his business time and attention to the business of the Company.

1.2 Duties. Executive will initially report to the Chief Executive Officer (the "**CEO**") of the Company. Executive shall perform his duties under this Agreement initially principally out of his personal residence and the Company's corporate offices in Carmel, IN or such other location as assigned by the Company. In addition, Executive shall make business trips to such places as may be necessary or advisable for the efficient operations of the Company.

1.3 Company Policies and Benefits. The employment relationship between the parties shall also be subject to the Company's personnel policies and procedures as they may be interpreted, adopted, revised or deleted from time to time in the Company's sole discretion. Executive will be eligible to participate on the same basis as similarly situated employees in the Company's benefit plans in effect from time to time during Executive's employment. All matters of eligibility for coverage or benefits under any benefit plan shall be determined in accordance with the provisions of the such plan. The Executive shall be entitled to paid vacation in accordance with the plans, policies, programs and practices of the Company applicable to its senior executives in effect from time to time, but in no event shall the Executive be entitled to less than four (4) weeks of vacation per calendar year (pro-rated for any partial year of service). The Company reserves the right to change, alter, or terminate any benefit plan in its sole discretion. Notwithstanding the foregoing, in the event that the terms of this Agreement differ from or are in conflict with the Company's general employment policies or practices, this Agreement shall control.

2. **<u>COMPENSATION</u>.**

2.1 **<u>Salary</u>**. Executive shall receive for services to be rendered hereunder an initial base salary of $ 260,000.00 on annualized basis, subject to review and adjustment from time to time by the Company, and payable subject to standard federal and state payroll withholding requirements in accordance with the Company's standard payroll practices ("***Base Salary***").

2.2 **<u>Annual Discretionary Bonus</u>**. Executive shall be eligible for a discretionary annual calendar year performance bonus (the "***Annual Bonus***") with an annual target of forty percent (40%) of Executive's then-current Base Salary (the "***Target Amount***"). Whether or not Executive is eligible for any Annual Bonus will be dependent upon the actual achievement by Executive and the Company of the applicable individual and corporate performance goals, as determined by the Board. No amount of any Annual Bonus is guaranteed at any time and may be greater or lesser than the Target Amount and may be zero. Any Annual Bonus, if awarded, will be paid in a single installment paid at the same time annual bonuses are generally paid to other similarly-situated employees of the Company and in any event no later than March 1st of the calendar year following the calendar year to which the Annual Bonus is applicable, and will be subject to deductions and withholdings. Executive's eligibility for an Annual Bonus and the Target Amount, if any, is subject to change in the discretion of the Board (or any authorized committee thereof).

2.3 **<u>Expense Reimbursement</u>**. The Company will reimburse Executive for reasonable business expenses in accordance with the Company's standard expense reimbursement policy, as the same may be modified by the Board from time to time. The Company shall reimburse Executive for all customary and appropriate business-related expenses actually incurred and documented in accordance with Company policy, as in effect from time to time . For the avoidance of doubt, to the extent that any reimbursements payable to Executive are subject to the provisions of Section 409A of the Internal Revenue Code of 1986, as amended (the "***Code***"): (a) any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, (b) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (c) the right to reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

2.4 **<u>Stock Option.</u>** Subject to approval by the Board, the Company anticipates granting to Executive an option to purchase 425,305 shares of the Company's common stock at the fair market value as determined by the Board as of the date of grant (the "***Option***"). The anticipated Option will be governed by the terms and conditions of the Company's Equity Incentive Plan (the "***Plan***") and the option grant agreement, and will vest 25% on the one-year anniversary of the date of grant, and thereafter over the ensuing 3 years in a series of thirty-six (36) successive equal monthly installments, subject to your Continuous Service (as defined in the Plan) as of each such date.

3. **<u>CONFIDENTIAL INFORMATION, INVENTIONS, NON-COMPETITION AND NON-SOLICITATION OBLIGATIONS.</u>** As a condition of employment, Executive agrees to execute and abide by the Employee Confidential Information, Inventions, Non-Solicitation and Non-Competition Agreement, attached as **Exhibit A** which may be amended by the parties from time to time without regard to this Agreement (the "***Confidential Information Agreement***"). The Confidential Information Agreement contains provisions that are intended by the parties to survive and do survive termination of this Agreement.

4. <u>OUTSIDE ACTIVITIES DURING EMPLOYMENT</u>. Except with the prior written consent of the Company, Executive will not, while employed by the Company, undertake or engage in any other employment, occupation or business enterprise that would interfere with Executive's responsibilities and the performance of Executive's duties hereunder except for (i) reasonable time devoted to volunteer services for or on behalf of such religious, educational, non-profit and/or other charitable organization as Executive may wish to serve, (ii) reasonable time devoted to activities in the non-profit and business communities consistent with Executive's duties; and (iii) such other activities as may be specifically approved in writing by the Company. [Company hereby acknowledges consent's to Executive's existing position at AgeneBio, Inc. and deems that it complies with this Section 4.]

5. <u>NO CONFLICT WITH EXISTING OBLIGATIONS</u>. Executive represents that Executive's performance of all the terms of this Agreement and as an Executive of the Company do not and will not breach any agreement or obligation of any kind made prior to Executive's employment by the Company, including agreements or obligations Executive may have with prior employers or entities for which Executive has provided services. Executive has not entered into, and Executive agrees that Executive will not enter into, any agreement or obligation, either written or oral, in conflict herewith.

6. <u>TERMINATION OF EMPLOYMENT</u>. The parties acknowledge that Executive's employment relationship with the Company is at-will. Either Executive or the Company may terminate the employment relationship for any reason whatsoever at any time, with or without Cause or advance notice. The provisions in this Section govern the amount of compensation, if any, to be provided to Executive upon termination of employment and do not alter this at-will status.

6.1 <u>Termination by the Company without Cause or Resignation by Executive for Good Reason</u>.

(a) The Company shall have the right to terminate Executive's employment with the Company pursuant to this Section 6.1 at any time without Cause (as defined in Section 6.2(b) below) by giving notice as described in Section 7.1 of this Agreement. A termination pursuant to Section 6.4 or 6.5 below is not a termination without Cause for purposes of receiving the benefits described in this Section 6.1.

(b) In the event the Company terminates Executive's employment without Cause or Executive Resigns for Good Reason (as defined in Section 6.1(g) below), and provided that such termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "***Separation from Service***"), then Executive shall be entitled to receive the Accrued Obligations

(as defined below) and, subject to Executive's compliance with the obligations in Section 6.1(c) below, Executive shall be eligible to receive the following severance benefits (the "***Severance Benefits***"):

(i) The Company will pay Executive an amount equal to Executive's then current Base Salary for six (6) months, less all applicable withholdings and deductions, and paid in equal installments beginning on the Company's second regularly scheduled payroll date following the Release Effective Date (as defined in Section 6.1(c) below), with the remaining installments occurring on the Company's regularly scheduled payroll dates thereafter.

(ii) If Executive timely elects continued coverage under COBRA for Executive and Executive's dependents under the Company's group health plans following such termination, then the Company shall pay the COBRA premiums necessary to continue Executive's and his covered dependents' health insurance coverage in effect for Executive (and Executive's covered dependents) on the termination date until the earliest of: (i) twelve (12) months following the termination date (the "***COBRA Severance Period***"); (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment; or (iii) the date Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination (such period from the termination date through the earlier of (i)-(iii), (the "***COBRA Payment Period***"). Notwithstanding the foregoing, if at any time the Company determines that its payment of COBRA premiums on Executive's behalf would result in a violation of applicable law (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of paying COBRA premiums pursuant to this Section, the Company shall pay Executive on the last day of each remaining month of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premium for such month, subject to applicable tax withholding, for the remainder of the COBRA Payment Period. Nothing in this Agreement shall deprive Executive of his rights under COBRA or ERISA for benefits under plans and policies arising under his employment by the Company.

(c) Executive will be paid all of the Accrued Obligations (as defined in Section 6.1(d) below) on the Company's first payroll date after Executive's date of termination from employment or earlier if required by law. If eligible to receive the Severance Benefits pursuant to Section 6.1(b) of this Agreement, Executive will only receive such Severance Benefits if: (i) within the time period provided in the separation agreement (which shall be no longer than 60 days following the date of Executive's Separation from Service), Executive has signed and delivered to the Company a separation agreement that includes, among other terms, an effective general release of claims in favor of the Company and its affiliates and representatives, in the form presented by the Company (the "***Release***"), which cannot be revoked in whole or part by such date (the date that the Release can no longer be revoked is referred to as the "***Release Effective Date***"); and (ii) if Executive holds any other positions with the Company, he resigns such position(s) to be effective no later than the date of Executive's termination date (or such other date as requested by the Board); (iii) Executive returns all Company property; (iv) Executive complies with his post-termination obligations under this Agreement and the Confidential Information Agreement; and (v) Executive complies with the terms of the Release, including, without limitation, any non-disparagement, confidentiality and cooperation provisions contained in Release.

(d) For purposes of this Agreement, "***Accrued Obligations***" are (i) Executive's accrued but unpaid salary through the date of termination, (ii) any unreimbursed business expenses incurred by Executive payable in accordance with the Company's standard expense reimbursement policies, and (iii) benefits owed to Executive under any qualified retirement plan or health and welfare benefit plan in which Executive was a participant in accordance with applicable law and the provisions of such plan.

(e) The Severance Benefits provided to Executive pursuant to this Section 6.1 are in lieu of, and not in addition to, any benefits to which Executive may otherwise be entitled under any Company severance plan, policy or program.

(f) Any damages caused by the termination of Executive's employment without Cause would be difficult to ascertain; therefore, the Severance Benefits for which Executive is eligible pursuant to Section 6.1(b) above in exchange for the Release is agreed to by the parties as liquidated damages, to serve as full compensation, and not a penalty.

(g) "***Good Reason***" for purposes of this Agreement shall mean the occurrence of any of the following conditions without Executive's consent, after Executive's provision of written notice to the Company of the existence of such condition (which notice must be provided as described in Section 7.1 within thirty (30) days of the initial existence of the condition and must specify the particular condition in reasonable detail), provided that the Company has not first provided notice to Executive of its intent to terminate Executive's employment: (i) a material reduction in Executive's duties, responsibilities or authorities, provided, however, that neither the conversation of the Company to a subsidiary, division or unit of an acquiring entity, or Executive's reporting relationships following a Change in Control, nor a change in title, will be deemed a "material reduction" in and of itself or material adverse alteration in, Executive's position, title, duties, or responsibilities; (ii) a material (greater than 10%) reduction by the Company of Executive's Base Salary (except in the case of either an across the board reduction in salaries or a temporary reduction due to financial exigency); or (iii) the relocation of Executive's principal place of employment by fifty (50) or more miles from Executive's then-current principal place of employment. Notwithstanding the foregoing, Good Reason shall only exist if the Company is provided a thirty (30) day period to cure the event or condition giving rise to Good Reason, and it fails to do so within that cure period (and, additionally, Executive must resign for such Good Reason condition by giving notice as described in Section 7.1 within thirty (30) days after the period for curing the violation or condition has ended).

6.2 **Termination by the Company for Cause**.

(a) The Company shall have the right to terminate Executive's employment with the Company at any time for Cause by giving notice as described in Section 7.1 of this Agreement.

(b) "Cause" for purposes of this Agreement shall mean that the Company has determined in its sole discretion that Executive has engaged in any of the following: (i) a material breach of any covenant or condition under this Agreement or any other agreement between the Company and Executive; (ii) any act constituting dishonesty, fraud, immoral or disreputable conduct; (iii) any conduct which constitutes a felony under applicable law; (iv) violation of any Company policy or any act of misconduct; (v) refusal to follow or implement a clear and reasonable directive of Company; (vi) negligence or incompetence in the performance of Executive's duties or failure to perform such duties in a manner satisfactory to the Company after the expiration of ten (10) days without cure after written notice of such failure; (vii) failure to pass to the satisfaction of the Company, a preliminary background check or failure to submit proof of legal eligibility to work in the United States; or (viii) breach of fiduciary duty.

(c) In the event Executive's employment is terminated at any time for Cause, Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company's standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.3 Resignation by Executive (other than for Good Reason).

(a) Executive may resign from Executive's employment with the Company at any time by giving notice as described in Section 7.1.

(b) In the event Executive resigns from Executive's employment with the Company (other than for Good Reason), Executive will not receive Severance Benefits, or any other compensation or benefits, except that, pursuant to the Company's standard payroll policies, the Company shall provide to Executive the Accrued Obligations.

6.4 Termination by Virtue of Death or Disability of Executive.

(a) In the event of Executive's death while employed pursuant to this Agreement, all obligations of the parties hereunder shall terminate immediately, and the Company shall, pursuant to the Company's standard payroll policies, provide to Executive's legal representatives Executive's accrued but unpaid salary through the date of death together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

(b) Subject to applicable state and federal law, the Company shall at all times have the right, upon written notice to Executive, to terminate this Agreement based on Executive's Disability (as defined below). Termination by the Company of Executive's employment based on "***Disability***" shall mean termination because Executive is unable due to a physical or mental condition to perform the essential functions of Executive's position with or without reasonable accommodation for one hundred twenty (120) consecutive calendar days or six (6) months in the aggregate during any twelve (12) month period or based on the written certification by two licensed physicians of the likely continuation of such condition for such period. This definition shall be interpreted and applied consistent with the Americans with Disabilities Act, the Family and Medical Leave Act, and other applicable law. In the event Executive's employment is terminated based on Executive's Disability, Executive will not receive the Severance Benefits, or any other severance compensation or benefit, except that, pursuant to the Company's standard payroll policies, the Company shall pay to Executive the accrued but unpaid salary of Executive through the date of termination, together with all compensation and benefits payable to Executive based on his participation in any compensation or benefit plan, program or arrangement through the date of termination.

6.5 [RESERVED]

6.6 Notice; Effective Date of Termination.

(a) Termination of Executive's employment pursuant to this Agreement shall be effective on the earliest of:

(i) immediately after the Company gives notice to Executive of Executive's termination, with or without Cause, unless pursuant to Section 6.2(b)(vi) in which case ten (10) days after notice if not cured or unless the Company specifies a later date, in which case, termination shall be effective as of such later date;

(ii) immediately upon Executive's death;

(iii) ten (10) days after the Company gives notice to Executive of Executive's termination on account of Executive's Disability, unless the Company specifies a later date, in which case, termination shall be effective as of such later date, *provided* that Executive has not returned to the full time performance of Executive's duties prior to such date;

(iv) ten (10) days after Executive gives written notice to the Company of Executive's resignation, *provided* that the Company may set a termination date at any time between the date of notice and the date of resignation, in which case Executive's resignation shall be effective as of such other date. Executive will receive compensation through any required notice period; or

(v) for a termination for Good Reason, immediately upon Executive's full satisfaction of the requirements of Section 6.1(g).

(b) In the event notice of a termination under subsections (a)(i) and (iii) is given orally, at the other party's request, the party giving notice must provide written confirmation of such notice within five (5) business days of the request in compliance with the requirement of Section 7.1 below. In the event of a termination for Cause, written confirmation shall specify the subsection(s) of the definition of Cause relied on to support the decision to terminate.

6.7 Cooperation With Company After Termination of Employment. Following termination of Executive's employment for any reason, Executive shall fully cooperate with the Company in all matters relating to the winding up of Executive's pending work including, but not limited to, any litigation in which the Company is involved, and the orderly transfer of any such pending work to such other employees as may be designated by the Company. The Company will reimburse Executive for reasonable out-of-pocket expenses Executive incurs in connection with any such cooperation (excluding forgone wages, salary, or other compensation) and will make reasonable efforts to accommodate Executive's scheduling needs.

6.8 Application of Section 409A. It is intended that all of the benefits and payments under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A of the Code provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions. If not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A of the Code, and incorporates by reference all required definitions and payment terms. For purposes of Section 409A of the Code (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement

(whether severance payments, reimbursements or otherwise) will be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder will at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of his Separation from Service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code, and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation", then if delayed commencement of any portion of such payments is required to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code and the related adverse taxation under Section 409A of the Code, the timing of the payments upon a Separation from Service will be delayed as follows: on the earlier to occur of (i) the date that is six months and one day after the effective date of Executive's Separation from Service, and (ii) the date of Executive's death (such earlier date, the "***Delayed Initial Payment Date***"), the Company will (A) pay to Executive a lump sum amount equal to the sum of the payments upon Separation from Service that Executive would otherwise have received through the Delayed Initial Payment Date if the commencement of the payments had not been delayed pursuant to this paragraph, and (B) commence paying the balance of the payments in accordance with the applicable payment schedules set forth above. No interest will be due on any amounts so deferred.

7. General Provisions.

7.1 Notices. Any notices required hereunder to be in writing shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by electronic mail or confirmed facsimile if sent during normal business hours of the recipient, and if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the Company at its primary office location and to Executive at Executive's address as listed on the Company payroll or to Executive's Company-issued email address or Executive's email address as listed in Company records, or at such other address as the Company or Executive may designate by ten (10) days advance written notice to the other.

7.2 Severability. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

7.3 Survival. Provisions of this Agreement which by their terms must survive the termination of this Agreement in order to effectuate the intent of the parties will survive any such termination, whether by expiration of the term, termination of Executive's employment, or otherwise, for such period as may be appropriate under the circumstances.

7.4 **Waiver**. If either party should waive any breach of any provisions of this Agreement, it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

7.5 **Complete Agreement**. This Agreement constitutes the entire agreement between Executive and the Company with regard to the subject matter hereof. This Agreement is the complete, final, and exclusive embodiment of their agreement with regard to this subject matter and supersedes any prior oral discussions or written communications and agreements. This Agreement is entered into without reliance on any promise or representation other than those expressly contained herein, and it cannot be modified or amended except in writing signed by Executive and an authorized officer of the Company. The parties have entered into a separate Confidential Information Agreement and have or may enter into separate agreements related to equity. These separate agreements govern other aspects of the relationship between the parties, have or may have provisions that survive termination of Executive's employment under this Agreement, may be amended or superseded by the parties without regard to this Agreement and are enforceable according to their terms without regard to the enforcement provision of this Agreement.

7.6 **Counterparts**. This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but all of which taken together will constitute one and the same Agreement.

7.7 **Headings**. The headings of the sections hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

7.8 **Successors and Assigns**. The Company shall assign this Agreement and its rights and obligations hereunder in whole, but not in part, to any Company or other entity with or into which the Company may hereafter merge or consolidate or to which the Company may transfer all or substantially all of its assets, if in any such case said Company or other entity shall by operation of law or expressly in writing assume all obligations of the Company hereunder as fully as if it had been originally made a party hereto, but may not otherwise assign this Agreement or its rights and obligations hereunder. Executive may not assign or transfer this Agreement or any rights or obligations hereunder, other than to Executive's estate upon Executive's death.

7.9 **Choice of Law**. All questions concerning the construction, validity and interpretation of this Agreement will be governed by the law of the State of Indiana.

7.10 **Resolution of Disputes.** The parties recognize that litigation in federal or state courts or before federal or state administrative agencies of disputes arising out of Executive's employment with the Company or out of this Agreement, or Executive's termination of employment or termination of this Agreement, may not be in the best interests of either Executive or the Company, and may result in unnecessary costs, delays, complexities, and uncertainty. The parties agree that any dispute between the parties arising out of or relating to the negotiation, execution, performance or termination of this Agreement or Executive's employment, including, but not limited to, any claim arising out of this Agreement, claims under Title VII of the Civil Rights Act of 1964, as amended, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, Section 1981 of the Civil

Rights Act of 1966, as amended, the Family Medical Leave Act, the Executive Retirement Income Security Act, and any similar federal, state or local law, statute, regulation, or any common law doctrine, whether that dispute arises during or after employment, shall be settled by binding arbitration in accordance with the Employment Arbitration Rules and Mediation Procedures of the American Arbitration Association; *provided however*, that this dispute resolution provision shall not apply to any separate agreements between the parties that do not themselves specify arbitration as an exclusive remedy. The location for the arbitration shall be the Charlottesville, Virginia area. Any award made by such panel shall be final, binding and conclusive on the parties for all purposes, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators' fees and expenses and all administrative fees and expenses associated with the filing of the arbitration shall be borne by the Company; *provided however*, that at Executive's option, Executive may voluntarily pay up to one-half the costs and fees. The parties acknowledge and agree that their obligations to arbitrate under this Section survive the termination of this Agreement and continue after the termination of the employment relationship between Executive and the Company. The parties each further agree that the arbitration provisions of this Agreement shall provide each party with its **exclusive remedy**, and each party expressly waives any right it might have to seek redress in any other forum, except as otherwise expressly provided in this Agreement. By election arbitration as the means for final settlement of all claims, **the parties hereby waive their respective rights to, and agree not to, sue each other in any action in a Federal, State or local court with respect to such claims, but may seek to enforce in court an arbitration award rendered pursuant to this Agreement. The parties specifically agree to waive their respective rights to a trial by jury, and further agree that no demand, request or motion will be made for trial by jury**.

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties have executed this Employment Agreement on the day and year written below effective as of the Effective Date (as defined herein).

Acumen Pharmaceuticals, Inc.

By: /s/ Daniel J. O’Connell
Daniel J. O’Connell,
President and Chief Executive Officer

Executive:

/s/ Russell Barton
Russell Barton

January 21, 2021
Date