Filed Pursuant to Rule 424(b)(4)
Registration Numbers: 333-216663 and 333-217186.

930,000 Class A Units consisting of common stock and warrants and 13,350 Class B Units consisting of shares of Series A Preferred Stock and warrants (and 4,470,000 shares of common stock underlying shares of Series A Preferred Stock and warrants)

We are offering 930,000 Class A Units, with each Class A Unit consisting of one share of common stock, par value $0.001 per share (the "common stock") and a warrant to purchase half of one share of our common stock (together with the shares of common stock underlying such warrants, the "Class A Units") at a public offering price of $5.00 per Class A Unit. Each warrant included in the Class A Units entitles its holder to purchase half of one share of common stock at an exercise price per share of $5.50.

We are also offering to those purchasers whose purchase of Class A Units in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering, the opportunity to purchase, if they so choose, in lieu of the number of Class A Units that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%), 13,350 Class B Units. Each Class B Unit will consist of one share of Series A Preferred Stock, par value $0.001 per share (the "Series A Preferred Stock"), convertible into 200 shares of common stock and warrants to purchase 100 shares of our common stock (together with the shares of common stock underlying such shares of Series A Preferred Stock and such warrants, the "Class B Units" and, together with the Class A Units, the "units") at a public offering price of $1,000.00 per Class B Unit. Each warrant included in the Class B Units entitles its holder to purchase 100 shares of common stock at an exercise price per share of $5.50.

The Class A Units and Class B Units have no stand-alone rights and will not be certificated or issued as stand-alone securities. The shares of common stock, Series A Preferred Stock and warrants comprising such units are immediately separable and will be issued separately in this offering. The underwriters have the option to purchase additional shares of common stock and/or warrants to purchase shares of common stock solely to cover over-allotments, if any, at the price to the public less the underwriting discounts and commissions. The over-allotment option may be used to purchase shares of common stock, or warrants, or any combination thereof, as determined by the underwriters, but such purchases cannot exceed an aggregate of 15% of the number of shares of common stock (including the number of shares of common stock issuable upon conversion of shares of Series A Preferred Stock) and warrants sold in the primary offering. The over-allotment option is exercisable for 45 days from the date of this prospectus.

Our common stock is listed on The Nasdaq Capital Market under the symbol "CBIO". The closing price of our common stock on April 6, 2017, as reported by The Nasdaq Capital Market, was $7.35 per share. We do not intend to apply for listing of the warrants offered hereby or the shares of Series A Preferred Stock on any securities exchange or trading system.

Investing in the units involves a high degree of risk. Before making any investment in these securities, you should consider carefully the risks and uncertainties in the section entitled "Risk Factors" beginning on page 13 of this prospectus.

	Per Class A Unit	Per Class B Unit	Total
Public offering price(1)	$ 5.00	$ 1,000.00	$18,000,000.00
Underwriting discount(2)(3)	$ 0.40	$ 80.00	$ 1,440,000.00
Proceeds, before expenses, to Catalyst Biosciences, Inc.	$ 4.60	$ 920.00	$16,560,000.00

(1) The public offering price and underwriting discount corresponds to (x) in respect of the Class A Units (i) a public offering price per share of common stock of $4.995 and (ii) a public offering price per warrant of $0.01 per whole share of common stock and (y) in respect of the Class B Units (i) a public offering price per share of Series A Preferred Stock of $999.00 and (ii) a public offering price per warrant of $0.01 per whole share of common stock.

(2) We have also agreed to reimburse for certain expenses. See "Underwriting."

(3) We have granted a 45-day day option to the underwriter to purchase additional shares of common stock and/or warrants to purchase shares of common stock (up to 15% of the number of shares of common stock (including the number of shares of common stock issuable upon conversion of shares of Series A Preferred Stock) and warrants sold in the primary offering) solely to cover over-allotments, if any.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense. The securities are not being offered in any jurisdiction where the offer is not permitted.

Ladenburg Thalmann

The date of this prospectus is April 7, 2017

TABLE OF CONTENTS

You should rely only on the information contained in this prospectus or in any related free writing prospectus filed by us with the Securities and Exchange Commission, or the SEC. We have not, and the underwriters and their affiliates have not, authorized anyone to provide you with any information or to make any representation not contained in this prospectus. We do not, and the underwriters and their affiliates do not, take any responsibility for, and can provide no assurance as to the reliability of, any information that others may provide to you. This prospectus is not an offer to sell or an offer to buy units in any jurisdiction where offers and sales are not permitted. The information in this prospectus is accurate only as of its date, regardless of the time of delivery of this prospectus or any sale of units. You should also read and consider the information in the documents to which we have referred you under the caption "Where You Can Find More Information" in the prospectus.

Neither we nor the underwriters have done anything that would permit a public offering of the units or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the units and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

The following summary is qualified in its entirety by, and should be read together with, the more detailed information and financial statements and related notes thereto appearing elsewhere in this prospectus. Before you decide to invest in our common stock, you should read the entire prospectus carefully, including the risk factors and the financial statements and related notes included in this prospectus Unless the context requires otherwise, in this prospectus the terms "Catalyst," the "Company," "we," "us" and "our" refer to Catalyst Biosciences, Inc., together with its subsidiary, Catalyst Bio, Inc. This prospectus includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included in this prospectus are the property of their respective owners.

Company Overview

We are a clinical-stage biopharmaceutical company focused on developing novel medicines to address serious medical conditions for patients who need new or better treatment options. We have used a scientific approach to engineer several novel protease-based therapeutic candidates. We are focusing our product development efforts in the field of hemostasis (the process that regulates bleeding) and have a mission to develop valuable therapies for individuals with hemophilia.

With drug candidates in clinical and advanced preclinical development, we are a leader in the field of prophylactic subcutaneously (SQ) dosed coagulation factor therapies for individuals with hemophilia. We have assembled an experienced management team, scientists and advisors with subject matter expertise, a strategic collaborator, an enabling technology platform, and a leading intellectual property position in the fields of protease therapeutics to advance our clinical and preclinical pipeline.

Our Focus—Hemophilia

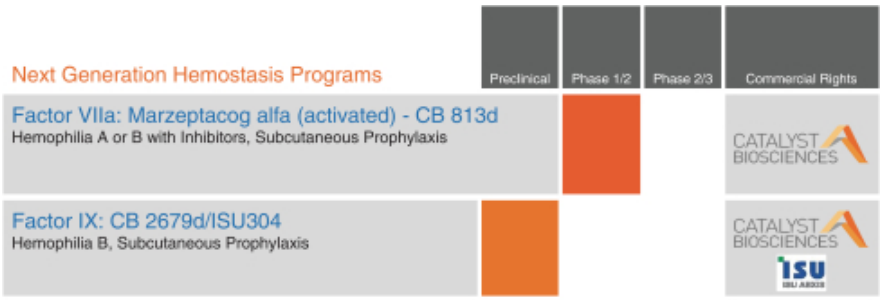
Hemophilia is a rare but serious bleeding disorder that results from a genetic or an acquired deficiency of a protein required for normal blood coagulation. There are two major types of hemophilia, A and B, that are caused by alterations in Factor VIII or Factor IX genes, respectively, with a corresponding deficiency in the affected proteins. The disease is X chromosome-linked, meaning that most people who inherit the disorder and suffer from symptoms are male. However, female carriers of mutations in Factor VIII or Factor IX can also have reduced clotting factor levels.

Individuals with hemophilia suffer from spontaneous bleeding episodes and substantially prolonged bleeding times that can become limb- or life-threatening following injury or trauma. In cases of severe hemophilia, spontaneous bleeding into muscles or joints is frequent and often results in permanent, disabling joint damage. Individuals with hemophilia are currently treated with replacement therapy of key coagulation proteins, Factor VIII for hemophilia A or Factor IX for hemophilia B.

Our Pipeline of Product Candidates

We are currently focused on the clinical development of improved, next-generation subcutaneous prophylaxis using enhanced potency Factor VIIa and Factor IX variants.

The following table summarizes our development programs.



Our Technology

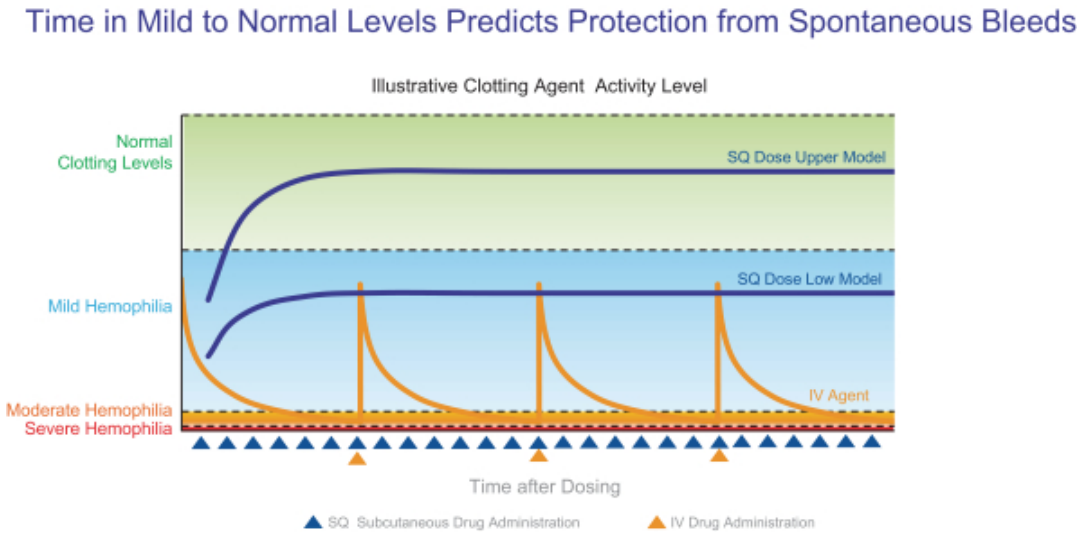
We are applying our substantial expertise in protease engineering and our proprietary product discovery platform to create, engineer and characterize protease drug candidates. Proteases regulate several complex biological cascades, or sequenced biochemical reactions, including the coagulation cascade (a mechanism of blood clotting) in hemophilia and non-hemophilia settings and the complement cascade that causes inflammation and tissue damage in certain diseases. Our protease expertise allowed us to improve the biochemical and pharmacological properties of currently marketed hemophilia protease drugs, specifically Factors VIIa, IX and Xa and to create completely novel proteases that cleave disease-causing proteins, specifically complement Factor 3 (C3) for the potential treatment of dry age-related macular degeneration (Dry AMD) and renal delayed graft function (DGF).

We estimate the total market for our product candidates is $3.4 billion. Based on industry reports, annual worldwide sales in 2016 for Factor VIIa recombinant products for individuals with hemophilia A or B with an inhibitor were approximately $1.4 billion, and prothrombin complex concentrate products used to treat individuals with hemophilia A or B with an inhibitor were $0.8 billion. Worldwide sales in 2016 for Factor IX products for individuals with hemophilia B were approximately $1.2 billion.

We believe that the shortcomings of currently approved therapies, including a requirement for intravenous infusion, are barriers to prophylactic treatment strategies that, if surmounted, could provide meaningfully improved long-term clinical outcomes for individuals with hemophilia.

The substantially enhanced potency of marzeptacog alfa (activated) and CB 2679d/ISU304 compared with existing treatment options may allow for effective subcutaneous prophylactic treatment of individuals with hemophilia A or B with an inhibitor or individuals with hemophilia B, respectively. Our engineered hemostasis proteases are designed to overcome current treatment limitations by allowing delivery via subcutaneous injection which we believe will facilitate effective prophylactic treatment, especially in children, which represent approximately 40% of individuals with hemophilia, and may ultimately deliver substantially better outcomes for individuals with hemophilia.

Subcutaneous dosing results in progressive increases in the levels of our protease factors until they reach a stable blood level therapeutic target range (ideally mild hemophilia to normal). Conversely, dosing by intravenous (IV) infusions results in very high factor levels in the blood initially, but the factor level then falls rapidly to a trough level at a range that is measured as moderate or severe hemophilia, triggering the next dose. These results are illustrated in the diagram below.



Stable factor levels could potentially yield a significant improvement in outcomes and have the added benefit of convenience over competing intravenous therapeutics, particularly when administered to children where venous access is challenging.

Factor VIIa

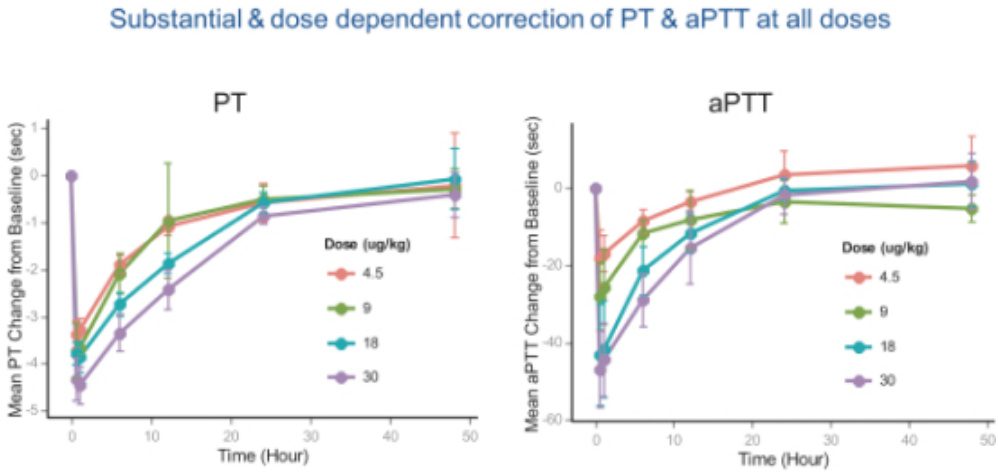
Our most advanced product candidate is marzeptacog alfa (activated) (formerly CB 813d), a next-generation Factor VIIa variant, was tested in an intravenous Phase 1 clinical trial that was completed in February 2015 to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics and coagulation activity of marzeptacog alfa (activated) in severe hemophilia A and B with and without an inhibitor.

Marzeptacog alfa (activated) is initially being developed for the prophylactic treatment of individuals with severe hemophilia A or B with inhibitors. Pfizer Inc. (“Pfizer”) filed the Investigational New Drug Application (IND) with the FDA for the Phase 1 trial in August 2011 for adult males with hemophilia A or B, with or without an inhibitor to Factor VIII or Factor IX. We have received the IND application filed with the FDA from Pfizer and plan to initiate the Phase 2 portion of a Phase 2/3 clinical subcutaneous prophylaxis efficacy trial in the fourth quarter of 2017. Marzeptacog alfa (activated) has received orphan drug designation in the United States from the FDA.

On June 29, 2009, we entered into a Research and License Agreement with Wyeth Pharmaceuticals, Inc., subsequently acquired by and referred to herein as Pfizer, whereby we and Pfizer collaborated on the development of novel human Factor VIIa products and we granted Pfizer the exclusive rights to develop and commercialize the licensed products on a worldwide basis. On April 2, 2015, Pfizer notified us that it was exercising its right to terminate the research and license agreement, and on December 8, 2016, we signed a definitive agreement related to the termination of the Pfizer agreement. Pursuant to this termination agreement, Pfizer granted us an exclusive license to Pfizer’s proprietary rights for manufacturing materials and processes that apply to Factor VIIa variants, CB 813a and marzeptacog alfa (activated). Pfizer also transferred to us the

IND application and documentation related to the development, manufacturing and testing of the Factor VIIa products as well as the orphan drug designation. Pursuant to this agreement, we agreed to make contingent cash payments to Pfizer in an aggregate amount equal to up to $17.5 million, payable upon the achievement of clinical, regulatory and commercial milestones. Following commercialization of any of Factor VIIa products, Pfizer would also receive a single-digit royalty on net product sales on a country-by-country basis for a predefined royalty term.

In the Phase 1 clinical trial of intravenous marzeptacog alfa (activated) conducted by Pfizer, 25 individuals with severe hemophilia A or B with and without an inhibitor were enrolled and treated. Clinical endpoints included safety, tolerability, pharmacokinetics and clot-forming activity, such as prothrombin time, or PT, activated partial thromboplastin time, or aPTT, thrombin-antithrombin activity and others. Results showed that single doses of marzeptacog alfa (activated) were well tolerated when administered to individuals with hemophilia A and B, and there were no instances of bleeding or thrombosis. As shown in the graph below, marzeptacog alfa (activated) demonstrated pharmacological efficacy as measured by significant shortening of aPTT (activated partial thromboplastin time) and PT (prothrombin time) for up to 24-hours post dosing. The results were presented in a poster session at the International Society on Thrombosis and Haemostasis (ISTH) Meeting held in Toronto, Canada from June 20 to 25, 2015.



We designed marzeptacog alfa (activated) to combine higher clot-generating activity, or potency, at the site of bleeding and improved duration of action in vivo to allow for the effective, long-term, prophylaxis in individuals with hemophilia with an inhibitor. We anticipate that this product candidate, if approved, could be used prophylactically to prevent bleeding episodes with subcutaneous administration that may be superior to intravenous infusions. We have previously demonstrated in several bleeding models that marzeptacog alfa (activated) can treat or prevent bleeding when dosed intravenously. The next step required to develop marzeptacog alfa (activated) for subcutaneous use was to test its ability to correct bleeding times in hemophilia models and to achieve sufficient plasma (blood) levels of activity when dosed subcutaneously.

During the past nine months, we have presented data at scientific conferences demonstrating that daily subcutaneous administration in hemophilia B mice and hemophilia A dogs resulted in steady-state blood levels of marzeptacog alfa (activated) that correct the hemophilia coagulation impairment present at baseline as measured by whole blood clotting time and aPTT.

Factor IX

Our next most advanced product candidate is CB 2679d/ISU304, is a highly potent, next generation coagulation, Factor IX variant that is under development by our collaborator ISU Abxis and has been approved for human clinical trials by the Korean Food and Drug Administration. The National Hemophilia Foundation has recommended chronic, prophylactic treatment as the optimal therapy for individuals with severe hemophilia B. We intend to enter Phase 1/2 clinical development with our collaborator ISU Abxis in the second quarter of 2017, and clinical data is expected in the second half of 2017. We entered into a co-development agreement with ISU Abxis in 2013. Under the ISU Abxis agreement we licensed our proprietary human Factor IX products to ISU Abxis for initial development in South Korea. ISU Abxis is responsible for manufacturing, preclinical development activities and clinical development through a proof-of-concept Phase 1/2 study in individuals with hemophilia B. We have the sole rights and responsibility for worldwide development, manufacture, and commercialization of Factor IX products after Phase 1/2 development. ISU Abxis may exercise its right of first refusal to acquire commercialization rights in South Korea, in which case they would be entitled to profit sharing on worldwide sales.

CB 2679d/ISU304 has demonstrated in a hemophilia B mouse animal study higher potency than BeneFIX®, Pfizer's currently marketed Factor IX therapeutic, and Alprolix®, Bioverativ's approved Factor IX-Fc fusion protein, and may allow for subcutaneous prophylactic treatment of individuals with hemophilia B.

Factor Xa

We also have several Factor Xa variants that have demonstrated efficacy in several preclinical models and have the potential to be used as a universal pro-coagulant. We have delayed initiating further work on our Factor Xa therapeutic program at this time to focus our efforts on the Factor VIIa and Factor IX clinical programs.

Our Strategy

Our goal is to build a clinical-stage biopharmaceutical company whose mission is to develop valuable therapies for individuals with hemophilia who need new or better treatment options. Key elements of our strategy to achieve this goal are to:

- ***Advance the Clinical Development of our Lead Product Candidates:*** Our most advanced drug candidate, marzeptacog alfa (activated), for the treatment of hemophilia and to facilitate surgery in hemophilia, has completed a Phase 1 clinical trial evaluating safety and tolerability as well as pharmacokinetics, pharmacodynamics and coagulation activity. We expect that we will advance marzeptacog alfa (activated) into the Phase 2 portion of a Phase 2/3 subcutaneous dosing clinical efficacy trial in individuals with hemophilia A or B with an inhibitor in the fourth quarter of 2017. In addition, we expect that our collaborator ISU Abxis will initiate a Phase 1/2 subcutaneous dosing clinical trial of CB 2679d/ISU304, our next-generation Factor IX drug candidate in individuals with hemophilia B, in the second quarter of 2017, and clinical data is expected in the second half of 2017.
- ***Leverage Existing Strategic Factor IX Collaboration:*** We have established a strategic collaboration with ISU Abxis for its CB 2679d/ISU304 program. We are entitled to up front and milestone payments and have retained worldwide commercialization rights, except for ISU Abxis' right of first refusal for commercialization rights in South Korea, and subject to a future profit sharing arrangement. We believe our Factor IX collaboration contributes to our ability to advance our Factor IX product candidate through clinical development.
- ***Build a Hemostasis Franchise:*** We intend to build on our recent clinical and preclinical success in Factor VIIa and Factor IX by advancing our Factor VIIa program into the Phase 2 portion of a Phase 2/3 subcutaneous dosing clinical efficacy trial in the fourth quarter of 2017. The combination of the wholly owned Factor VIIa product candidate entering a Phase 2/3 clinical efficacy trial and the Factor IX product candidate entering a Phase 1/2 clinical trial may allow us to build a strong hemostasis franchise.

We continue to explore licensing opportunities for our anti-complement programs in DGF and Dry AMD so that we can focus our efforts and resources on advancing marzeptacog alfa (activated) and CB 2679d/ISU304 through Phase 2/3 and Phase 1/2 clinical trials, respectively.

Market Opportunity

Hemophilia A occurs in approximately 1 in 5,000 male births, and hemophilia B in 1 in 30,000 male births. The prevalence of hemophilia A and B in the United States is approximately 20,000 individuals out of an estimated 400,000 individuals worldwide.

Currently there is no cure for hemophilia. Treatment usually involves management of acute bleeding episodes or prophylactic treatment through factor replacement therapy by infusion of individuals' missing Factor VIII or IX.

A complication for individuals with hemophilia who are receiving factor replacement therapy is the production of antibodies, also called inhibitors, that inactivate the replacement factor. The overall prevalence of inhibitor formation is up to 30% in individuals with hemophilia A and up to 5% in individuals with hemophilia B. Individuals with an inhibitor are treated with what are known as bypassing agents that initiate coagulation by a pathway that is independent of Factor VIII or Factor IX, the proteins that are deficient or inactivated in individuals with hemophilia A and B respectively. Currently available bypassing agents include recombinant Factor VIIa, NovoSeven® RT produced by Novo Nordisk and activated prothrombin complex concentrates, marketed as FEIBA by Shire. NovoSeven® was first approved in 1999 and is indicated for treatment of bleeding episodes, prevention of bleeding during surgeries in individuals with hemophilia A or B with an inhibitor, and individuals with congenital Factor VII deficiency. In 2006, it was approved for the treatment of acquired hemophilia. NovoSeven® RT was approved in 2014 and is also indicated for treatment of Glanzmann's thrombasthenia. Sales of NovoSeven® RT in 2016, which we estimate based on our research, were $1.4 billion. FEIBA is approved for use in individuals with hemophilia A or B with an inhibitor, which we estimate, based on our research, had 2016 sales of $0.8 billion. Based on our market research, the treatable Factor VIIa patient population in the world's seven major markets is approximately 3,000 patients.

Based on our research, we estimate worldwide sales of all Factor IX-containing products for the treatment of hemophilia B in 2016 were approximately $1.2 billion, including approximately $0.7 billion as reported by Pfizer, Inc. for its BeneFIX® product and $0.3 billion as reported by Bioverativ and Swedish Orphan Biovitrum for their Alprolix® product, and we estimate that the worldwide Factor IX patient population is approximately 9,700 patients.

Intellectual Property

We have established a broad intellectual property portfolio including patents and patent applications covering the identification, selection, optimization, and manufacture of human proteases, the composition of matter and methods of use of our product candidates and related technology, and other inventions that are important to our business.

As more fully described below, as of January 8, 2017, our patent portfolio included approximately 112 patents; including 13 issued and allowed U.S. patents and 99 foreign granted and accepted patents, and 4 U.S. patent applications, plus an additional 64 pending foreign patent applications. We also rely on trade secrets and careful monitoring of our proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

All of our patents and applications were internally developed and assigned to us, except for one pending South Korean patent application that is co-owned. Our current patents and patent applications include:

- 59 patents, including 1 issued U.S. patent, and 16 patent applications, including 1 U.S. patent application, covering modified Factor VII polypeptides, such as our lead product candidate, marzeptacog alfa (activated),

and methods of production of modified Factor VII polypeptides. The U.S. patent, with patent term adjustment, and patent application, if granted, expires or is expected to expire, in 2031 and 2029. The foreign patents and patent applications, if granted, expire, or are expected to expire, respectively, in 2028-2029, and three such foreign patent applications are now beyond the period for opposition filing.

- 11 patents, including 3 issued and allowed U.S. patents and 16 patent applications, including 1 U.S. patent application, covering modified Factor IX polypeptides, such as our clinical candidate CB 2679d/ISU304. The issued and allowed U.S. patents, including patent term adjustment, expire, or are expected to expire, respectively, in 2030-2032 and the foreign patents and patent applications, if granted, expire, or are expected to expire, respectively, in 2031.

Business Organization

We commenced operations in 2002 and are a Delaware corporation. On August 20, 2015, we completed our business combination between Catalyst Bio, Inc. ("Catalyst Bio") and Targacept, Inc., which was incorporated in Delaware in 1997. Following the completion of the merger, the business conducted by the Company became primarily the business conducted by Catalyst Bio prior to the merger. In this prospectus, we refer to the business combination as the "merger" and to the Company prior to the merger as "Targacept." Discussions of historical results reflect the results of Catalyst Bio prior to the completion of the merger and do not include the historical results of Targacept prior to the completion of the merger.

Our corporate headquarters are in South San Francisco, California, 94080. Our telephone number is (650) 871-0761, and our website address is www.catalystbiosciences.com. The information on or accessible through our website does not constitute part of this prospectus or any accompanying prospectus supplement and should not be relied upon in connection with making any investment in our securities.

Recent Developments

On February 10, 2017, we effected a reverse stock split of our shares of common stock at a ratio of one-for-fifteen ("2017 Reverse Stock Split"). The 2017 Reverse Stock Split was approved by our stockholders at our special meeting of stockholders held on February 2, 2017. As a result of the 2017 Reverse Stock Split, every fifteen (15) shares of our common stock outstanding was automatically changed and reclassified into one (1) new share of common stock. Holders of common stock that would have otherwise received a fractional share of common stock pursuant to the 2017 Reverse Stock Split received cash in lieu of the fractional share. Unless indicated otherwise, the numbers set forth in this prospectus have been adjusted to reflect the 2017 Reverse Stock Split.

After the completion of this offering, we expect that our Board of Directors will approve and recommend to our stockholders an increase to the number of shares of common stock reserved for issuance under our 2015 Stock Incentive Plan, or the creation of a new stock incentive plan with additional shares. Shares reserved for issuance under any such plans, if approved by stockholders to the extent required by applicable laws and regulations, may be issued by the Board of Directors, or a committee of the Board of Directors, to employees, consultants and directors of the Company, including our current officers and directors. The amount of such increase has not been determined, but could equal up to 20% or more of our total number of shares outstanding or issuable after this offering, including shares issuable upon the exercise of options and warrants. The final determination of the amount of such increase will be made by the Board of Directors or a committee thereof and will be subject to stockholder approval to the extent required by applicable laws or regulations. Any issuance of such shares could dilute the ownership of our other stockholders.

Between January 1, 2017 and April 3, 2017, under our at the market offering program with JonesTrading Institutional Services LLC ("JonesTrading"), we sold an aggregate of 439,880 shares of our common stock for approximately $5.34 million of net proceeds. As of April 3, 2017, we had cash and cash equivalents of

approximately $18.5 million. The foregoing financial information should not be viewed as a substitute for full interim financial statements as of and for the three and six month periods ended March 31 or June 30, 2017, respectively, prepared in accordance with generally accepted accounting principles and reviewed by our auditors, which we will subsequently provide.

Summary of Risk Factors

Investing in our securities involves substantial risk, and our business is subject to numerous risks and uncertainties. You should carefully consider all of the information set forth in this prospectus and, in particular, the information under the heading "Risk Factors," prior to making an investment in our securities. Some of these risks include:

- We have incurred significant losses since our inception, and are expected to continue to incur significant losses for the foreseeable future;
- We will continue to need additional capital, and if we are unable to raise sufficient capital in the future, we will be forced to delay, reduce or eliminate product development programs;
- We have no history of clinical development or commercialization of pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability;
- We are substantially dependent upon the success of marzeptacog alfa (activated) and CB 2679d/ISU304;
- We are very early in our development efforts and have only one product candidate that has completed a Phase 1 clinical trial, all of our other product candidates are still in preclinical development, and if we are unable to complete clinical development of our product candidates or experience significant delays in doing so, our business will be materially harmed;
- Clinical drug development involves a lengthy and expensive process with an uncertain outcome, results from our successful Phase 1 trials may not be confirmed in later trials, and if serious adverse or unacceptable side effects are identified during the development of our product candidates, we may need to abandon or limit our development of some of our product candidates;
- We contract with third parties for the manufacture of our product candidates for preclinical testing and expect to continue to do so for clinical testing and commercialization, and this reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts;
- We expect to rely on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials;
- If we are unable to obtain, protect or enforce intellectual property rights related to our product candidates, we may not be able to compete effectively in our markets;
- Our product candidates are years away from regulatory approval;
- Even if any of our product candidates receives marketing approval, we may fail to achieve the degree of market acceptance by physicians, patients, third party payers and others in the medical community necessary for commercial success;
- We face substantial competition that may result in others discovering, developing or commercializing products before or more successfully than we do;
- If the market opportunities for our product candidates are smaller than expected, our revenues may be adversely affected and our business may suffer;

- Stockholders may experience dilution of their ownership interests because of future issuances of common stock under our equity incentive plans;
- We have in the past and may in the future fail to meet the continued listing requirements of The Nasdaq Capital Market, and our ability to publicly or privately sell equity securities and the liquidity of our common stock could be adversely affected if we are delisted from The Nasdaq Capital Market;
- Management will have broad discretion as to the use of proceeds from this offering and we may use the net proceeds in ways with which you may disagree;
- The offering price will be set by our Board of Directors and does not necessarily indicate the actual or market value of our common stock;
- The Series A Preferred Stock is an unlisted security and there is no public market for it; and
- The warrants may not have any value.

Available Information

We file electronically with the Securities and Exchange Commission, or SEC, our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K pursuant to Section 13(a) or 15(d) of the Exchange Act. We make available on our website at www.catalystbiosciences.com, free of charge, copies of these reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

The public may read or copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that website is www.sec.gov.

The information in or accessible through the websites referred to above are not incorporated into, and are not considered part of, this filing. Further, our references to the URLs for these websites are intended to be inactive textual references only.

The Offering	
Class A Units offered by us	We are offering 930,000 Class A Units. Each Class A Unit consists of one share of common stock and a warrant to purchase half of one share of our common stock (together with the shares of common stock underlying such warrants).
Offering price per Class A Unit	$5.00
Class B Units offered by us	We are also offering to those purchasers whose purchase of Class A Units in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering, the opportunity to purchase, in lieu of the number of Class A Units that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock, 13,350 Class B Units. Each Class B Unit will consist of one share of Series A Preferred Stock, par value $0.001 per share, convertible into 200 shares of common stock and a warrant to purchase 100 shares of our common stock (together with the shares of our common stock underlying such shares of Series A Preferred Stock and warrants).
Offering price per Class B Unit	$1,000.00
Overallotment option	The underwriters have the option to purchase up to additional shares of common stock, and/or warrants to purchase shares of common stock solely to cover over-allotments, if any, at the price to the public less the underwriting discounts and commissions. The over-allotment option may be used to purchase shares of common stock, or warrants, or any combination thereof, as determined by the underwriters, but such purchases cannot exceed an aggregate of 15% of the number of shares of common stock (including the number of shares of common stock issuable upon conversion of shares of Series A Preferred Stock) and warrants sold in the primary offering. The over-allotment option is exercisable for 45 days from the date of this prospectus.
Description of warrants	The warrants will be exercisable beginning on the date of issuance and expire on the five (5) year anniversary of the date of issuance at an initial exercise price per share equal to $5.50, subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock.
Description of Series A Preferred Stock	Each share of Series A Preferred Stock is convertible at any time at the holder’s option into 200 shares of common stock.

	Notwithstanding the foregoing, we shall not effect any conversion of Series A Preferred Stock, with certain exceptions, to the extent that, after giving effect to an attempted conversion, the holder of shares of Series A Preferred Stock (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of our common stock in excess of 4.99% (or, at the election of the purchaser, 9.99%) of the shares of our common stock then outstanding after giving effect to such exercise. For additional information, see "Description of Securities—Preferred Stock" on page 53 of this prospectus.
Shares of common stock outstanding before this offering	1,241,636 shares
Shares of Series A Preferred Stock outstanding before this offering	None
Shares of common stock outstanding after this offering	2,171,636 shares
Shares of Series A Preferred Stock outstanding after this offering	13,350 shares
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $16.2 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from the sale of the units for working capital and general corporate purposes, which may include development of our clinical and preclinical product candidates, intellectual property protection and enforcement, capital expenditures, investments, in-licenses and acquisitions. See "Use of Proceeds" on page 45 of this prospectus.
Risk factors	You should carefully read and consider the information set forth under "Risk Factors" on page 13 of this prospectus and the documents incorporated by reference herein before deciding to invest in our securities.
Nasdaq Capital Market common stock symbol	CBIO
No listing of Series A Preferred Stock or warrants	We do not intend to apply for listing of the shares of the Series A Preferred Stock or warrants on any securities exchange or trading system.

The number of shares of common stock to be outstanding before this offering and to be outstanding after this offering in the table above is based on 1,241,636 shares of common stock outstanding as of April 3, 2017 and excludes:

- Shares of our common stock that may be issued upon conversion of shares of Series A Preferred Stock and exercise of warrants issued in this offering;
- 125,323 shares of common stock issuable upon the exercise of stock options outstanding at a weighted average exercise price of $120.00 per share and 101,304 additional shares of common stock reserved for issuance under our stock option plan;
- 12,039 shares of common stock issuable upon the exercise of warrants outstanding at a weighted exercise price of $145.11 per share; and
- 92,462 shares of common stock issuable upon conversion of outstanding redeemable convertible notes at a rate of $137.85 per share.

Unless otherwise indicated, all information contained in this prospectus assumes no exercise by the underwriter of its overallotment option.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the risks described in our Annual Report on Form 10-K for the year ended December 31, 2016, as updated by any other document that we subsequently file with the Securities and Exchange Commission and that is incorporated by reference into this prospectus, the risks described below and all of the other information contained in this prospectus and incorporated by reference into this prospectus, including our financial statements and related notes, before investing in our securities. If any of the possible events described in those sections or below actually occur, our business, business prospects, cash flow, results of operations or financial condition could be harmed. In this case, the trading price of our common stock could decline, and you might lose all or part of your investment.

The following is a discussion of the risk factors that we believe are material to us at this time. These risks and uncertainties are not the only ones facing us and there may be additional matters that we are unaware of or that we currently consider immaterial. All of these could adversely affect our business, results of operations, financial condition and cash flows.

Risks related to our financial condition and capital requirements

We have incurred significant losses since our inception, and are expected to continue to incur significant losses for the foreseeable future.

We are a clinical-stage biotechnology company, and we have not yet generated significant revenues. We have incurred net losses in each year since our inception in August 2002, including net losses of $16.9 million and $14.8 million for the years ended December 31, 2016 and 2015, respectively. As of December 31, 2016, we had an accumulated deficit of $148.0 million.

We are still in the early stages of development of our product candidates, and have no products approved for commercial sale. To date, we have financed our operations primarily from private placements of convertible preferred stock, payments under collaboration agreements, and to a lesser extent through issuances of shares of common stock.

We have devoted most of our financial resources to research and development, including our preclinical development activities. We expect to continue to incur significant expenses and operating losses over the next several years. Our operating losses may fluctuate significantly from quarter to quarter and year to year. We are expected to continue to incur significant expenses and increasing operating losses for at least the next several years, and our expenses will increase substantially if and as we:

- continue clinical development of marzeptacog alfa (activated) (formerly CB 813d);
- continue preclinical and clinical development of CB 2679d/ISU304;
- further develop the manufacturing process for our product candidates;
- attract and retain skilled personnel;
- seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical studies;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- seek to identify and validate additional product candidates;
- acquire or in-licenses other product candidates and technologies;
- make milestone or other payments under collaboration agreements, or any in-license agreements;
- maintain, protect and expand our intellectual property portfolio;

- create additional infrastructure to support operations as a public company and our product development and planned future commercialization efforts; and
- experience any delays or other issues with any of the above.

In addition, in connection with the license granted to us by Pfizer, we agreed to make contingent cash payments to Pfizer in an aggregate amount equal to up to $17.5 million, payable upon the achievement of clinical, regulatory and commercial milestones, the timing of which is uncertain. Following commercialization of any of Factor VIIa products, Pfizer would also receive a single-digit royalty on net product sales on a country-by-country basis for a predefined royalty term. See “Business Overview—Factor VIIa” in this prospectus.

Further, in connection with an initial statement of work under the Development and Manufacturing Agreement that we have entered into with CMC ICOS Biologics, Inc. (“CMC”), we have agreed to a total of $3.8 million in payments to CMC, subject to the completion of work relating to the manufacturing development of marzeptacog alfa (activated). See “Item 1—Business—Collaborations” in our Annual Report on Form 10-K for the year ended December 31, 2016.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical testing and clinical trials of product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling any products for which regulatory approval is obtained. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, we may never generate revenues that are significant enough to achieve profitability.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Failure to become and remain profitable would depress the value of the company and could impair our ability to raise capital, expand our business, maintain research and development efforts, diversify product offerings or even continue operations. A decline in the value of the Company could also cause you to lose all or part of your investment.

We will continue to need additional capital in the future. If we are unable to raise sufficient capital in the future, we will be forced to delay, reduce or eliminate product development programs.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. We expect our research and development expenses to increase with our ongoing activities, particularly activities related to the continued clinical development of marzeptacog alfa (activated), including a clinical efficacy trial and, if Phase 1 clinical trials of CB 2679d/ISU304 are successful, an efficacy trial for that compound. Until we can generate a sufficient revenue from our product candidates, if ever, we expect to finance future cash needs through public or private equity offerings, debt financings, corporate collaborations and/or licensing arrangements. Additional funds may not be available when we need them on terms that are acceptable, or at all. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs.

In August 2015, we issued $37.0 million in aggregate principal amount of redeemable convertible notes to former Targacept stockholders as part of a dividend immediately prior to the completion of the merger (the “Pre-Closing Dividend”), with an amount equal to the total principal deposited in an escrow account for the benefit of the noteholders. The notes may be redeemed for cash or repaid upon maturity, holders may also elect to convert any principal amount of the notes into shares of common stock at a price of $137.85 per share on or before February 19, 2018. As of December 31, 2016, $17.3 million in aggregate principal has been redeemed and $0.3 million had been converted to common stock. Except for this arrangement, we have no commitments or

arrangements for any additional financing to fund our research and development programs. There can be no assurance regarding the amount of the notes that will be redeemed or the portion of the remaining $19.4 million in capital that will become available to us.

We believe that our current available cash, together with the proceeds from this offering will be sufficient to fund our operations for at least 18 months. However, we will need to raise substantial additional capital to complete the development and commercialization of marzeptacog alfa (activated) and CB 2679d/ISU304, and depending on the availability of capital, may need to delay development of some of our product candidates.

Because successful development of our product candidates is uncertain, we are unable to estimate the actual funds required to complete research and development and commercialize our products under development. Our future funding requirements, both near and long-term, will depend on many factors, including, but not limited to:

- the initiation, progress, timing, costs and results of clinical trials for our product candidates in hemophilia, including marzeptacog alfa (activated) and CB 2679d/ISU304;
- the number and characteristics of product candidates that we pursue;
- the terms and timing of any future collaboration, licensing or other arrangements that we may establish;
- the outcome, timing and cost of regulatory approvals;
- the cost of obtaining, maintaining, defending and enforcing intellectual property rights, including patent rights;
- the effect of competing technological and market developments;
- the cost and timing of completing outsourced manufacturing activities;
- market acceptance of any product candidates for which we may receive regulatory approval;
- the cost of establishing sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval; and
- the extent to which we acquire, license or invest in businesses, products or technologies.

Raising additional funds by issuing securities or through licensing arrangements may cause dilution to stockholders, restrict our operations or require us to relinquish proprietary rights.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, stockholders will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect the rights of common stockholders.

Debt financing, if available at all, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, product candidates or future revenue streams or grant licenses on terms that are not favorable to us. We may also seek to access the public or private capital markets whenever conditions are favorable, even if we do not have an immediate need for additional capital at that time. There can be no assurance that we will be able to obtain additional funding if, and when necessary. If we are unable to obtain adequate financing on a timely basis, we could be required to delay, curtail or eliminate one or more, or all, of our development programs or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

In March 2016, we filed a shelf registration statement on Form S-3 with the SEC, which registration statement was declared effective on April 28, 2016 and allows us to offer up to $50 million of securities from time to time in one or more public offerings of our common stock. In addition, in March 2016, we entered into a Capital on

Demand™ Sales Agreement with JonesTrading. In accordance with the terms of the sales agreement, as of April 3, 2017, we have sold and issued 479,681 shares of our common stock having an aggregate offering price of $6.5 million through JonesTrading. Any additional sales in the public market of our common stock under the shelf registration statement could adversely affect prevailing market prices for our common stock.

We have no history of clinical development or commercialization of pharmaceutical products, which may make it difficult to evaluate the prospects for the company's future viability.

We began operations in August 2002. Our operations to date have been limited to financing and staffing the company, developing our technology and product candidates and establishing collaborations. We have not yet demonstrated an ability to successfully conduct a clinical trial, obtain marketing approvals, manufacture a product for clinical trials or at commercial scale, or arrange for a third-party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Consequently, predictions about the company's future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

Risks related to the discovery, development and commercialization of our product candidates

We are substantially dependent upon the success of marzeptacog alfa (activated) and CB 2679d/ISU304.

The failure of marzeptacog alfa (activated) or CB 2679d/ISU304 to commence anticipated clinical trials or achieve successful clinical trial endpoints, delays in clinical development generally, unanticipated adverse side effects or any other adverse developments or information related to marzeptacog alfa (activated) or CB 2679d/ISU304 would significantly harm our business, its prospects and the value of the company's common stock. We expect to advance marzeptacog alfa (activated) into a Phase 2 clinical efficacy trial in individuals with hemophilia A or B with an inhibitor and to advance CB 2679d/ISU304 into a Phase 1/2 clinical trial in individuals with hemophilia B. There is no guarantee that the results of these clinical trials, if they occur, will be positive or will not generate unanticipated safety concerns. The Phase 1 clinical trial of marzeptacog alfa (activated) was a single-dose escalation trial that would not, compared to multi-dose trials, be expected to exclude the possibility of an immunological response to marzeptacog alfa (activated) in individuals who received the product candidate. After completion of the dosing portion of the Phase 1 clinical trial, Pfizer observed a positive result in an assay for a potential non-neutralizing anti-drug antibody in a single individual at a time point 60 days post-dosing that was not confirmed by testing of a subsequent, follow-up blood draw. Additional confirmatory testing indicated that this was due to a false positive assay result; however, there can be no assurance that anti-marzeptacog alfa (activated) antibodies will not be observed in subsequent trials. If subsequent multi-dose trials of marzeptacog alfa (activated) or of CB 2679d/ISU304 demonstrate a treatment-related neutralizing immunological response in individuals, development of such product could be halted. Even if the next trials of marzeptacog alfa (activated) are positive, marzeptacog alfa (activated) may require substantial additional trials and other testing before approving marzeptacog alfa (activated) for marketing, and CB 2679d/ISU304 will require additional trials and other testing before receiving approval for marketing.

Marzeptacog alfa (activated) and CB 2679d/ISU304 are not expected to be commercially available in the near term, if at all. Further, the commercial success of each product candidate will depend upon its acceptance by physicians, patients, third-party payors and other key decision-makers as a therapeutic and cost effective alternative to currently available products. If we are unable to successfully develop, obtain regulatory approval for and commercialize marzeptacog alfa (activated) and CB 2679d/ISU304, our ability to generate revenue from product sales will be significantly delayed and our business will be materially and adversely affected, and we may not be able to earn sufficient revenues to continue as a going concern.

Even if the FDA or other regulatory agency approves marzeptacog alfa (activated) or CB 2679d/ISU304, the approval may impose significant restrictions on the indicated uses, conditions for use, labeling, advertising, promotion, marketing and/or production of such product and may impose ongoing commitments or requirements

for post-approval studies, including additional research and development and clinical trials. The FDA and other agencies also may impose various civil or criminal sanctions for failure to comply with regulatory requirements, including withdrawal of product approval. Regulatory approval from authorities in other foreign countries will be needed to market marzeptacog alfa (activated) or CB 2679d/ISU304 in those countries. Approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions. If we fail to obtain approvals from foreign jurisdictions, the geographic market for marzeptacog alfa (activated) or CB 2679d/ISU304 would be limited.

We plan to conduct clinical trials for subcutaneous dosing trials of marzeptacog alfa (activated) and CB 2679d/ISU304, which is an untested route of administration for these product candidates in humans.

We expect to commence a subcutaneous prophylaxis clinical trial of marzeptacog alfa (activated) in 2017 and for ISU Abxis to commence a subcutaneous clinical trial of CB 2679d/ISU304 in the second quarter of 2017 and clinical data is expected in the second half of 2017. Neither product candidate has previously been studied in human clinical trials using subcutaneous dosing. There can be no assurance that either product will achieve efficacious levels of biological activity when administered subcutaneously. There can also be no assurance that the clinical trial results will be positive or that the clinical trials will not generate unanticipated safety concerns. The failure of either product to achieve successful clinical trial endpoints, delays in clinical trial commencement or in clinical development generally, unanticipated adverse side effects, adverse immunological responses, or any other adverse developments or information related to our product candidates would significantly harm our business, its prospects and the value of our common stock.

Marzeptacog alfa (activated) and CB 2679d/ISU304 may cause the generation of antibodies, which could prevent their further development.

Both marzeptacog alfa (activated) and CB 2679d/ISU304 are protein molecules which may cause the generation of antibodies in individuals who receive them. The Phase 1 clinical trial of marzeptacog alfa (activated) was a single-dose intravenous escalation trial that would not, compared to multi-dose trials or higher dose administered subcutaneously, be expected to exclude the possibility of an immunological response to marzeptacog alfa (activated) in individuals who received the product candidate. One subject from the 18 µg/kg dose group developed a weak, transient and non-neutralizing anti-marzeptacog alfa (activated) antibody at a single time point of Day 60 post-dose. The positive anti-marzeptacog alfa (activated) antibody was characterized as cross-reactive with NovoSeven® and native human Factor VII. Additional review of the raw data suggests that the bioanalytical result of a weak positive anti-drug antibody immune response at Day 60 may represent a false-positive test result. There were no subjects with evidence of neutralizing antibodies against marzeptacog alfa (activated), and there were no subjects with >50% depletion of Factor VII activity relative to baseline.

If subsequent multi-dose trials demonstrate a treatment-related neutralizing immunological response in individuals, development of marzeptacog alfa (activated) or of CB 2679d/ISU304 could be halted.

We are transitioning manufacturing and clinical activities related to marzeptacog alfa (activated) from Pfizer to CMC and continuing to optimize the manufacturing process. This process will be lengthy and its outcome uncertain.

Pfizer, through its wholly-owned subsidiary Wyeth, conducted the Phase 1 clinical trial of marzeptacog alfa (activated) pursuant to a research and license agreement. Pfizer terminated this agreement effective June 1, 2015.

In March 2016, we engaged CMC to conduct manufacturing development and, upon successful development of the manufacturing process, manufacture the marzeptacog alfa (activated) that we intend to use in our clinical trials on a fee-for-services basis. During 2016, we also worked with Pfizer to transition manufacturing capabilities from Pfizer to CMC, and in December 2016, Pfizer granted us an exclusive license to its proprietary rights for manufacturing materials and processes that apply to Factor VIIa variants, CB 813a and marzeptacog

alfa (activated). Pfizer also transferred the IND and documentation related to the development, manufacturing and testing of the Factor VIIa products to us. Manufacturing of biological therapeutics such as marzeptacog alfa (activated) is complex and scale-dependent, and we may need to further optimize the manufacturing process of marzeptacog alfa (activated) to manufacture clinical supplies for additional clinical trials. There can be no assurance that CMC will be able to manufacture sufficient quantities of marzeptacog alfa (activated) to satisfy our clinical trial requirements in a timely manner, within expected budgets or at all. See "Business Overview—Factor VIIa" in this prospectus.

We are very early in our development efforts and have only one product candidate that has completed a Phase 1 clinical trial. All our other product candidates are still in preclinical development. If we are unable to obtain regulatory clearance and commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

We are very early in our development efforts and have only one product candidate that has completed a Phase 1 clinical trial, marzeptacog alfa (activated). All our other product candidates are still in preclinical development. Following the Korean Ministry of Food and Drug Safety's approval in March 2017 of the IND application for CB 2679d/ISU304, we expect to advance CB 2679d/ISU304 into Phase 1/2 clinical trial in individuals with hemophilia B. We also expect to advance marzeptacog alfa (activated) into a Phase 2 clinical efficacy trial in individuals with hemophilia A or B with an inhibitor; however, the FDA may require additional pre-clinical testing before we are permitted to commence subcutaneous dosing trials of marzeptacog alpha (activated). Moreover, engineered protease biopharmaceuticals are a relatively new class of therapeutics. There can be no assurance as to the length of the trial period, the number of individuals the FDA will require to be enrolled in the trials to establish the safety, efficacy, purity and potency of the engineered protease products, or that the data generated in these trials will be acceptable to the FDA or foreign regulatory agencies to support marketing approval. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on several factors, including the following:

- successful completion of preclinical studies and clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- making arrangements with third-party manufacturers for, or establishing, commercial manufacturing capabilities;
- launching commercial sales of the products, if and when approved, whether alone or in collaboration with others;
- acceptance of the products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining healthcare coverage and adequate reimbursement;
- protecting our rights in our intellectual property portfolio; and
- maintaining a continued acceptable safety profile of the products following approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome. Results from our successful Phase 1 trials may not be confirmed in later trials, and if serious adverse or unacceptable side effects are identified during the development of our product candidates, we may need to abandon or limit our development of some of our product candidates.

Clinical testing is expensive, time consuming and uncertain as to outcome. We cannot guarantee that any preclinical studies and clinical trials will be conducted as planned or completed on schedule, if at all. The clinical development of our product candidates is susceptible to the risk of failure at any stage of drug development, including failure to demonstrate efficacy in a clinical trial or across a suitable population of patients, the occurrence of severe or medically or commercially unacceptable adverse events, failure to comply with protocols or applicable regulatory requirements and determination by the FDA or any comparable foreign regulatory authority that a drug product is not approvable. It is possible that even if one or more of our product candidates has a beneficial effect, that effect will not be detected during clinical evaluation as a result of one or more of a variety of factors, including the size, duration, design, measurements, conduct or analysis of our clinical trials. Conversely, as a result of the same factors, our clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any. Similarly, in our clinical trials we may fail to detect toxicity of or intolerability caused by our product candidates, or mistakenly believe that our product candidates are toxic or not well tolerated when that is not in fact the case.

In addition, the outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials. For example, the Phase 1 clinical trial of marzeptacog alfa (activated) was a single dose trial, and adverse immunological reactions such as the development of a neutralizing anti-drug antibody would not be likely to appear until patients received multiple doses in later trials.

Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in earlier development, and we may face similar setbacks. The design of a clinical trial can determine whether our results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support marketing approval. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we believe that the results of clinical trials for our product candidates warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

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. Any Phase 2, Phase 3 or other clinical trials that we may conduct may not demonstrate the efficacy and safety necessary to obtain regulatory approval to market our product candidates.

If our product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may need to abandon development or limit development of the product candidate 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. Any such limitations could adversely affect the value of our product candidates or common stock.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We or our collaborators may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate, enroll and maintain enrolment of a sufficient number of eligible patients to participate in these

trials as required by the FDA or similar regulatory authorities outside the United States. In particular, there is a relatively small number of individuals with hemophilia, which may cause delays in enrollment of clinical trials of marzeptacog alfa (activated) in individuals with hemophilia A or B with an inhibitor or CB 2679d/ISU304 in individuals with hemophilia B. In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same indications as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates.

Patient enrollment is affected by other factors including:

- the severity of the disease under investigation;
- the eligibility criteria for the study in question;
- the perceived risks and benefits of the product candidate under study;
- the efforts to facilitate timely enrollment in clinical trials;
- 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 our clinical trials will result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in clinical trials conducted by us may also result in increased development costs for our product candidates, which would cause the value of the company to decline and limit our ability to obtain additional financing.

Risks related to our reliance on third parties

We depend on our collaborative relationship with ISU Abxis for the Phase 1 development of CB 2679d/ISU304.

We have a collaboration agreement with ISU Abxis for preclinical and Phase 1/2 development of an improved, next-generation Factor IX product, CB 2679d/ISU304. Under our agreement with ISU Abxis, ISU Abxis is responsible for manufacturing and Phase 1/2 clinical trials of this product candidate, and we depend on ISU Abxis to complete these activities.

Our ability to generate revenues from this arrangement will depend on the ability of ISU Abxis to successfully perform the functions assigned to it in this arrangement, and accordingly, any failure by ISU Abxis to develop this product candidate could adversely affect our cash flows. Further, this collaboration agreement may not lead to development or commercialization of this product candidate in the most efficient manner or at all, and ISU Abxis has the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms. We are subject to a number of risks associated with our dependence on ISU Abxis:

- We are not able to control any decisions by ISU Abxis regarding the amount and timing of resource expenditures for the development or commercialization of CB 2679d/ISU304, and may have limited or no ability to control such decisions with respect to other product candidates subject to collaboration agreements;
- ISU Abxis may manufacture insufficient amounts or quality of product for a clinical trial, or have difficulty transferring manufacturing of CB 2679d/ISU304 to a CMO if needed for future clinical trials, or may experience delays in either case;
- ISU Abxis may delay clinical trials or, provide insufficient funding for a clinical trial, stop a clinical trial or abandon products, repeat or conduct new clinical trials or require a new formulation of products for clinical testing;

- ISU Abxis may not perform its obligations as expected;
- Adverse regulatory determinations or other legal action may interfere with the ability of ISU Abxis to conduct clinical trials or other development activity;
- ISU Abxis may be subject to regulatory or legal action resulting from the failure to meet healthcare industry compliance requirements in the conduct of clinical trials or the promotion and sale of products;
- Our relationship with ISU Abxis could be adversely impacted by changes in their key management personnel and other personnel that are administering collaboration agreements; and
- The collaboration with ISU Abxis may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of CB 2679d/ISU304.

We expect to seek to establish additional collaborations, and, if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. Accordingly, we may seek one or more additional collaborators for the development and commercialization of one or more of our product candidates. For example, we may seek a new collaborator to develop marzeptacog alfa (activated) and might also seek collaborators for CB 2689d/ISU304 or our earlier stage programs. In addition, full development efforts on the use of our novel proteases for the treatment of DGF or dry AMD will likely involve significant cost, and we do not expect to conduct any such efforts except in collaboration with one or more partners who are willing to pay for such costs.

We face significant competition in seeking appropriate collaborators. Whether we can reach a definitive agreement with a collaborator 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 preclinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities and the regulatory pathway for any such approval, the potential market for the product candidate, the costs and complexities of manufacturing and delivering the product to patients and the potential of competing products. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such a collaboration could be more attractive than the one with us. There can also be no assurance that any collaboration agreements will be on favorable terms.

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 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 the product candidate for which we are seeking to collaborate, reduce or delay our development program or one or more of our other development programs, delay our potential commercialization or reduce the scope of any sales or marketing activities, and 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 product revenue.

We contract with third parties for the manufacture of our product candidates for preclinical testing and expect to continue to do so for clinical testing and commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We currently have no internal capabilities to manufacture our product candidates for clinical use or for preclinical trials following good manufacturing practices, or GMP, or good laboratory practices, or GLP. We expect to rely on one or more third-party contractors to manufacture, package, label and distribute clinical supplies and commercial quantities of any product candidate that we commercialize following approval for marketing by applicable regulatory authorities. We also expect to rely on one or more third-party contractors to manufacture our product candidates for use in our clinical trials. Reliance on such third-party contractors entails risks, including:

- our inability to identify and negotiate manufacturing and supply agreements with suitable manufacturers;
- manufacturing delays if our third-party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- the possible termination or nonrenewal of agreements by our third-party contractors at a time that is costly or inconvenient for us;
- the possible breach by the third-party contractors of our agreements with them;
- the failure of third-party contractors to comply with applicable regulatory requirements;
- the possible mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or active drug or placebo not being properly identified;
- the possibility of clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

We may incur delays in product development resulting from the need to identify or qualify manufacturers for our product candidates. Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

We and our contract manufacturers will be subject to significant regulation with respect to manufacturing our products. The manufacturing facilities on which we will rely may not continue to meet regulatory requirements and have limited capacity.

All entities involved in the preparation of therapeutics for clinical studies or commercial sale, including any contract manufacturers for our product candidates, are subject to extensive regulation. Components of a finished therapeutic product approved for commercial sale or used in late-stage clinical studies must be manufactured in accordance with GMP. These regulations govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of adventitious agents or other contaminants, or to inadvertent changes in the properties or stability of our product candidates that may not be detectable in final product testing. We or our contract manufacturers must supply all necessary documentation in support of a BLA on a timely basis and must adhere to the FDA's

good laboratory practices, or GLP, and GMP regulations enforced by the FDA through its facilities inspection program. Our facilities and quality systems and the facilities and quality systems of some or all our third-party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of our product candidates. In addition, the regulatory authorities may, at any time, audit or inspect a manufacturing facility involved with the preparation of our product candidates or the associated quality systems for compliance with the regulations applicable to the activities being conducted. If these facilities do not pass a pre-approval plant inspection or do not have a GMP compliance status acceptable for the FDA, FDA approval of the products will not be granted.

The regulatory authorities also may, at any time following approval of a product for sale, audit our manufacturing facilities or those of our third- party contractors. If any such inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulations occurs independent of such an inspection or audit, we or the relevant regulatory authority may require remedial measures that may be costly and/or time-consuming for us or a third-party to implement and that may include the temporary or permanent suspension of a clinical study or commercial sales or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

If we or any of our third-party manufacturers fail to maintain regulatory compliance, the FDA can impose regulatory sanctions including, among other things, refusal to approve a pending application for a new drug product or biologic product, or revocation of a pre-existing approval. As a result, our business, financial condition and results of operations may be materially harmed.

Additionally, if supply from one approved manufacturer is interrupted, there could be a significant disruption in commercial supply. An alternative manufacturer would need to be qualified through a BLA supplement which could result in further delay. The regulatory agencies may also require additional studies if a new manufacturer is relied upon for commercial production. Switching manufacturers may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause the delay of clinical studies, regulatory submissions, required approvals or commercialization of our product candidates, cause us to incur higher costs and prevent us from commercializing our products successfully. Furthermore, if our suppliers fail to meet contractual requirements, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical studies may be delayed or we could lose potential revenue.

We expect to rely on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We expect to rely on third parties such as contract research organizations, or CROs, medical institutions and clinical investigators to enroll qualified patients and conduct, supervise and monitor clinical trials. Our reliance on these third parties for clinical development activities will reduce our control over these activities. Our reliance on these third parties, however, will not relieve us of our regulatory responsibilities, including ensuring that our clinical studies are conducted in accordance with good clinical practices, or GCP, and the investigational plan and protocols contained in the relevant regulatory application, such as an investigational new drug application, or IND. In addition, the CROs with whom we contract may not complete activities on schedule, or may not conduct our preclinical studies or clinical studies in accordance with regulatory requirements or our clinical study design. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, our efforts to obtain regulatory approvals for, and to commercialize, our product candidates may be delayed or prevented.

Risks related to employee matters, managing growth and our business operations

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management and scientific personnel, including our President and Chief Executive Officer, Dr. Usman, our Chief Medical Officer, Dr. Levy, our Chief Financial Officer, Fletcher Payne, and our Senior Vice President of Technical Operations, Andrew Hetherington. We do not maintain "key man" insurance policies on the lives of these individuals or the lives of any of our other employees. In addition, we will need to add personnel to achieve our business objectives. The loss of the services of any of our executive officers, other key employees, and our inability to find suitable replacements, or our inability to hire new clinical development and manufacturing personnel, could result in delays in product development and harm our business.

We conduct operations at our facility in the San Francisco Bay Area. This region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all.

To induce valuable employees to remain at Catalyst, in addition to salary and cash incentives, we have provided stock options that vest over time. The value to employees of stock options that vest over time may be significantly affected by movements in the company's stock price that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of management and scientific and development teams may terminate their employment with the company on short notice. Our employees are under at-will employment arrangements, which means that any of our employees can leave employment with Catalyst at any time, with or without notice. Failure to retain, replace or recruit personnel could harm our business.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and collaborators. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA and non-U.S. regulators, to provide accurate information to the FDA and non-U.S. regulators, to comply with healthcare fraud and abuse laws and regulations in the United States and abroad, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare 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. Such misconduct could also involve the improper use of information obtained in the course of clinical studies that could result in regulatory sanctions and cause 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 and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

We will continue to incur significant increased costs as a result of operating as a public company, and our new management is required to devote substantial time to compliance initiatives, particularly after the completion of a one-year transition period to full compliance.

Upon the completion of the merger between Targacept and Catalyst Bio, the employment of the teams that historically operated the business of Targacept and its financial reporting was terminated, and substantially all of our current employees, including our finance staff, were the employees of Catalyst Bio from before the merger or are new hires. Accordingly, prior to the merger, we had never operated our current business as a public company. As a public company, we have and will continue to incur significant legal, accounting and other expenses that we did not incur as a private company, including costs associated with public company reporting and corporate governance requirements, in order to comply with the rules and regulations imposed by the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection, or the Dodd-Frank Act, as well as rules implemented by the SEC and Nasdaq. Stockholder activism, the political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways that are not currently anticipated. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. In addition, these rules and regulations make it difficult and expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain our current levels of such coverage. We expect that we will annually incur significant additional expenses to comply with the requirements imposed on us as a public company.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal controls over financial reporting and disclosure controls and procedures. In particular, as a public company, we are required to perform system and process evaluations and testing of our internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. However, our independent registered public accounting firm was not required to report on the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act for the year ended December 31, 2016, based on the SEC's guidance for reporting over smaller reporting companies. In addition, our testing, or the subsequent testing in the future by our independent registered public accounting firm, may reveal deficiencies in our internal control over financial reporting that may be deemed to be material weaknesses. Our compliance with Section 404 will require that we incur substantial accounting expense and management time on compliance-related issues. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, we could lose investor confidence in the accuracy and completeness of our financial reports, which could cause our stock price to decline.

We or the third parties upon whom we depend may be adversely affected by earthquakes or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our offices are located in the San Francisco Bay Area, which is prone to earthquakes. Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans that, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business.

Risks related to our intellectual property

If we are unable to obtain, protect or enforce intellectual property rights related to our product candidates, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidates. The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. Third parties may challenge the validity, enforceability or scope of our patents that, may result in those patents being narrowed or invalidated. The patent applications that we own may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. Certain of our patents also cover processes, for which enforcement can be difficult. Any of these outcomes could impair our ability to prevent competition from third parties that, may have an adverse impact on our business.

If the patents or patent applications we hold or have in-licensed for our programs or product candidates are invalidated or fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could threaten our ability to commercialize future products. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available; however the life of a patent, and the protection it affords, is limited. Once the patent life has expired for a product, we may be open to competition from generic medications.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent and other elements of our product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures 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.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. In addition, others may independently discover our trade secrets and proprietary information.

Further, filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, 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 both in the United

States and abroad. If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Third-party claims of intellectual property infringement or challenging the inventorship or ownership of our patents may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on 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 patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions and *inter partes* reexamination proceedings before the U.S. Patent and Trademark Office, or U.S. PTO, and corresponding foreign patent offices. 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 pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that the manufacture, use or sale of our product candidates infringes patents held by such third parties, or that we are employing their proprietary technology without authorization. For example, we are aware of a patent that has been issued in Europe (with counterparts in Australia, China, Japan, Poland, and South Korea) and includes a claim that may read on marzeptacog alfa (activated). An opposition proceeding with respect to this patent sustained the patent, and we filed an appeal on November 11, 2016. There can also be no assurance whether or not the claims of such patent would be found to read on marzeptacog alfa (activated) even if a claim survives the opposition. There may be third-party patents or patent applications with claims to compositions of matter, materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe.

In addition, we have received confidential and proprietary information from third parties, and we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. We may be subject to claims that our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against these claims.

Parties making claims against us may obtain injunctive or other equitable relief that could effectively block our ability to further develop and commercialize one or more of our product candidates unless we redesigned infringing products (which may be impossible) or obtained a license under the applicable patents (which may not be available on commercially reasonable terms or at all), or until such patents expire.

We may be involved in lawsuits to protect or enforce our patents.

Competitors may infringe our patents. To counter infringement or unauthorized use, we or our collaborators may be required to file infringement claims that can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that one of our patents is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us 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 from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

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. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims, regardless of their merit, would cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, in addition to paying royalties, redesign infringing products or obtain one or more licenses from third parties that, may be impossible or require substantial time and monetary expenditure. 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. 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.

We may need to license certain intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third-party may hold intellectual property, including patent rights, that is important or necessary to the development of our products. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our products, in which case we would be required to obtain a license from these third parties on commercially reasonable terms, or our business could be harmed, possibly materially.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, and changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith 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 U.S. PTO is currently developing regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, were enacted March 16, 2013. However, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business.

Risks related to regulatory approval of our product candidates and other legal compliance matters

If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize our product candidates, and our ability to generate revenue will be materially impaired.

While we have multiple drug candidates in clinical and advanced preclinical development for a range of diseases, we have not yet submitted biologics license applications, or BLAs, for our engineered human proteases to the FDA, or similar approval filings to comparable foreign authorities. Submission of a BLA requires extensive preclinical and clinical data and supporting information that demonstrates the product candidate's safety, purity, and potency, also known as safety and effectiveness, for each desired indication. A BLA must also include significant information regarding the chemistry, manufacturing and controls for the product. One of our product candidates, marzeptacog alfa (activated), has completed a Phase 1 clinical trial. However, failure of one or more clinical trials can occur at any stage in the clinical trial process. Accordingly, the regulatory pathway for our product candidates is still uncertain, complex, and lengthy, and ultimately approval may not be obtained.

We may experience delays in completing planned clinical trials for a variety of reasons, including delays related to:

- the availability of financial resources to commence and complete the planned trials;
- inability to reach agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval at each clinical trial site by an independent institutional review board, or IRB;
- recruiting suitable patients to participate in trials;
- having patients complete a trial or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- adding new clinical trial sites; and
- manufacturing sufficient quantities of qualified materials under cGMPs and applying them on a subject by subject basis for use in clinical trials.

We could also experience delays in obtaining approval if physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles given the serious nature of the diseases for the core indications for our product candidates. Additionally, a clinical trial may be suspended or terminated by us, the IRBs for the institutions in which the trials are being conducted, the Data Monitoring Committee for the trial, or by the FDA or other regulatory authorities for a number of reasons, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues, or adverse side effects, failure to demonstrate a benefit from using a product candidate, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience termination of, or delays in the completion of, any clinical trial of our product candidates, our ability to commercialize our product candidates will be harmed and our ability to generate revenue will be materially impaired. Additionally, delays in completing trials will increase costs, slow down our product development and approval process, and impair our ability to commence product sales and generate revenue. Many of the factors that could create or lead to a delay in the commencement or completion of clinical trials may ultimately lead to the denial of regulatory approval for our product candidates.

The FDA may disagree with our regulatory plan and we may fail to obtain regulatory approval of our product candidates.

The results of clinical trials we conduct may not support regulatory approval of our product candidates. Our product candidates could ultimately fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- We may be unable to demonstrate to the satisfaction of the FDA or comparable foreign authorities that our product candidates are safe and effective for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- We may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a BLA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we would market, sell and distribute our products. As a pharmaceutical company, even though we do not and may not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. These regulations include:

- the Federal Healthcare Anti-Kickback Statute that, prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid, and which will constrain our marketing practices and the marketing practices of our licensees, educational programs, pricing policies, and relationships with healthcare providers or other entities;
- the federal physician self-referral prohibition, commonly known as the Stark Law, which prohibits physicians from referring Medicare or Medicaid patients to providers of "designated health services" with whom the physician or a member of the physician's immediate family has an ownership interest or compensation arrangement, unless a statutory or regulatory exception applies;

- federal false claims laws that prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other government reimbursement programs that are false or fraudulent, and which may expose entities that provide coding and billing advice to customers to potential criminal and civil penalties, including through civil whistleblower or qui tam actions, and including as a result of claims presented in violation of the Federal Healthcare Anti- Kickback Statute, the Stark Law or other healthcare-related laws, including laws enforced by the FDA;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also created federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services that, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- federal physician sunshine requirements under the Affordable Care Act, which requires manufacturers of drugs, devices, biologics and medical supplies to report annually to the U.S. Department of Health and Human Services or HHS, information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations;
- the Federal Food, Drug, and Cosmetic Act, which, among other things, strictly regulates drug product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples; and
- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, state laws requiring pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and which may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, and state and foreign laws governing the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and often are not preempted by federal laws such as HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. 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 civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any physicians or other healthcare providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices for our product candidates.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of

our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. Cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

More recently, in March 2010, then-President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the PPACA, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the PPACA of importance to our potential product candidates are the following:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;
- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. These changes included aggregate reductions in Medicare payments to providers of up to 2% per fiscal year, starting in 2013. In January 2013, then-President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding.

We expect that the PPACA, as well as 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 or our

collaborators may receive for any approved product. 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 products.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

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

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

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, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts that, could adversely affect our business, financial condition, results of operations or prospects. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

We face potential product liability, and, if successful claims are brought against us, we may incur substantial liability and costs. If the use of our product candidates harms patients, or is perceived to harm patients even when such harm is unrelated to our product candidates, regulatory approvals could be revoked or otherwise negatively impacted and we could be subject to costly and damaging product liability claims.

The use of our product candidates in clinical trials and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. There is a risk that our product candidates may induce adverse events. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation;
- withdrawal of clinical trial participants;

- costs due to related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- the inability to commercialize our product candidates; and
- decreased demand for our product candidates, if approved for commercial sale.

We carry product liability insurance of $10,000,000 per occurrence and $10,000,000 aggregate limit. We believe our product liability insurance coverage is sufficient for our current clinical programs; however, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. If we obtain marketing approval for product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. On occasion, large judgments have been awarded in class action lawsuits based on drugs or medical treatments that had unanticipated adverse effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed insurance coverage, could adversely affect our results of operations and business.

Patients with the diseases targeted by our product candidates are often already in severe and advanced stages of disease and have both known and unknown significant pre-existing and potentially life-threatening health risks. During treatment, patients may suffer adverse events, including death, for reasons that may be related to our product candidates. Such events could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively impact or end our opportunity to receive or maintain regulatory approval to market our products, or require us to suspend or abandon our commercialization efforts. Even in a circumstance in which we do not believe that an adverse event is related to our products, the investigation into the circumstance may be time-consuming or inconclusive. These investigations may interrupt our sales efforts, delay our regulatory approval process in other countries, or impact and limit the type of regulatory approvals our product candidates receive or maintain. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on our business, financial condition, results of operations, or cash flows.

Risks related to commercialization of our product candidates

Even if any of our product candidates receives marketing approval, we 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 any of our product candidates receives marketing approval, we may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. For example, current hemophilia treatments like NovoSeven® are well established in the medical community, and doctors may continue to rely on these treatments. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on several factors, including:

- the efficacy and potential advantages compared with alternative treatments;
- our ability to offer our products for sale at competitive prices;
- the convenience and ease of administration compared with alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement;

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

Our product candidates are years away from regulatory approval.

Marzeptacog alfa (activated) and CB 2679d/ISU304 are not expected to be commercially available for several years, if at all. Further, the commercial success of either product candidate will depend upon its acceptance by physicians, individuals, third-party payors and other key decision-makers as a therapeutic and cost effective alternative to products available at the time, which may include competing products currently under development by others. See “We face substantial competition that may result in others discovering, developing or commercializing products before or more successfully than we do.” If we are unable to successfully develop, obtain regulatory approval for and commercialize marzeptacog alfa (activated) or CB 2679d/ISU304, our ability to generate revenue from product sales will be significantly delayed and our business will be materially and adversely affected, and we may not be able to earn sufficient revenues to continue as a going concern.

Even if the FDA or other regulatory agency approves marzeptacog alfa (activated) or CB 2679d/ISU304, the approval may impose significant restrictions on the indicated uses, conditions for use, labeling, advertising, promotion, marketing and/or production of such product and may impose ongoing commitments or requirements for post-approval studies, including additional research and development and clinical trials. The FDA and other agencies also may impose various civil or criminal sanctions for failure to comply with regulatory requirements, including withdrawal of product approval. Regulatory approval from authorities in foreign countries will be needed to market marzeptacog alfa (activated) or CB 2679d/ISU304 in those countries. Approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions. If we fail to obtain approvals from foreign jurisdictions, the geographic market for marzeptacog alfa (activated) or CB 2679d/ISU304 would be limited.

If we are unable to establish sales, marketing and distribution capabilities, we may not be successful in commercializing our product candidates if they are approved.

We have not yet established a sales, marketing or product distribution infrastructure for our other product candidates, which are still in preclinical or early clinical development. Except for ISU Abxis’ potential rights to commercialize CB 2679d/ISU304 in South Korea, we generally expect to retain commercial rights for the company’s hemophilia product candidates. We believe that it will be possible to access the United States hemophilia market through a focused, specialized sales force. However, we have not yet developed a commercial strategy for hemophilia products outside of the United States, or for any other of our product candidates. To achieve commercial success for any product for which we obtain marketing approval, we will need to establish a sales and marketing organization within the United States, and develop a strategy for sales outside of the United States.

There are risks involved with establishing internal 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 may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel. If we are unable to establish sales, marketing and distribution capabilities and enter into additional arrangements with third parties to perform these services, then our product revenues and profitability, if any, are likely to be lower than if we were to market, sell and distribute any products that we develop ourselves.

We face substantial competition that may result in others discovering, developing or commercializing products before or more successfully than we do.

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition, and a strong emphasis on proprietary products. We face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies, and public and private research institutions. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

Specifically, there are a large number of companies developing or marketing treatments for hemophilia, including many major pharmaceutical and biotechnology companies, including Novo Nordisk, which has developed NovoSeven®, a human recombinant coagulation Factor VIIa indicated for treatment of bleeding episodes that has been approved for use in treatment of hemophilia A or B individuals with an inhibitor to Factor VIII or Factor IX and in individuals with Factor VII deficiency and Glanzmann's thrombasthenia, Shire (formerly Baxter), which has developed BAX 817, a biosimilar of NovoSeven® that recently completed an intravenous Phase 3 clinical trial and has filed for marketing approval, Roche, which is developing ACE910/Emicizumab, a recombinant humanized bispecific antibody that binds to activated Factor IX and Factor X to mimic the cofactor function of Factor VIII and has been granted breakthrough therapy designation by the FDA to potentially treat hemophilia A, Alnylam, which is developing an investigational RNAi therapeutic targeting antithrombin for the treatment of hemophilia, OPKO Biologics, whose recombinant Factor VIIa product that may also be administered subcutaneously is in a Phase 1/2 clinical trial, and CSL Behring, which is developing an albumin-linked Factor VIIa that has an extended half-life. We are also aware of many companies focused on developing gene therapies that may compete with our planned hemophilia B indication, as well as several companies addressing other methods for modifying genes and regulating gene expression.

Our commercial opportunity in different indications could be reduced or eliminated if competitors develop and market products or therapies that are more convenient to use, more effective, less expensive, and safer to use than our products. Furthermore, if competitors gain FDA approval faster than we do, we may be unable to establish a strong market presence or to gain market share. The key competitive factors affecting the success of all our product candidates, if approved, are likely to be their efficacy, safety, convenience, price, the level of generic competition, and the availability of reimbursement from government and other third-party payors.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and diagnostic 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 individual registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Even if we commercialize any product candidates, the products may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives that, would harm our business.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted.

As a result, we may obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval.

Our ability to commercialize any product candidates successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for certain medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Coverage and reimbursement may not be available for any product that we or our collaborators commercialize and, even if these are available, the level of reimbursement may not be satisfactory. Reimbursement may affect the demand for, or the price of, any product candidate that receives marketing approval. Obtaining and maintaining adequate reimbursement for our products may be difficult. We may be required to conduct expensive pharmacoeconomic studies to justify coverage and reimbursement or the level of reimbursement relative to other therapies. If coverage and adequate reimbursement are not available or reimbursement is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent.

Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, ability to raise capital needed to commercialize products and overall financial condition.

The insurance coverage and reimbursement status of newly-approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue.

The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford expensive treatments. Sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. Moreover, increasing efforts by governmental and third-party payors, in the United States and abroad, to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. We expect to experience pricing pressures in connection with the sale of any of our product candidates, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

If the market opportunities for our product candidates are smaller than expected, our revenues may be adversely affected and our business may suffer.

We focus our research and product development on hemostasis and inflammation treatment. Our projections of both the number of people who suffer from related conditions, as well as the subset of people with these conditions who have the potential to benefit from treatment with our product candidates, are based on estimates. These estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of these diseases. The number of patients in the United States, Europe and elsewhere may turn out to be lower than expected or may not be otherwise amenable to treatment with our products, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

Risks related to our common stock

Our common stock ownership is concentrated with our executive officers and directors, and their respective affiliates, which limits your ability to influence corporate matters.

Our significant stockholders, acting together, have the ability to affect matters submitted to our stockholders for approval, including the approval of significant transactions. This concentration of ownership may have the effect of delaying, deferring or preventing a strategic transaction, even if such a transaction would benefit other stockholders. As a result, the market price of our common stock could be adversely affected.

The market price of our common stock has historically been highly volatile.

The trading price of our common stock has historically been highly volatile and the volume of common shares traded has been relatively low. Additionally, the stock market in general has experienced extreme price and volume fluctuations. The market prices of securities of pharmaceutical, biopharmaceutical and biotechnology companies in particular have been extremely volatile and have experienced fluctuations that have often been unrelated or disproportionate to operating performance. Factors giving rise to this volatility may include:

- regulatory or political developments in both the United States and abroad;
- developments concerning proprietary rights, including patents and litigation matters;
- disclosure of new collaborations or other strategic transactions;
- public concern about the safety or efficacy of product candidates or technology, their components, or related technology or new technologies generally;
- public announcements by competitors or others regarding new products or new product candidates; and
- general market conditions and comments by securities analysts and investors.

Fluctuations in operating results could adversely affect the price of our common stock.

Our operating results are likely to fluctuate significantly from quarter to quarter and year to year. These fluctuations could cause our stock price to decline. Some of the factors that may cause operating results to

fluctuate on a period-to-period basis include the scope, progress, duration results and costs of preclinical and clinical development programs, as well as non-clinical studies and assessments of product candidates and programs, restructuring costs, implementation or termination of collaboration, licensing, manufacturing or other material agreements with third parties, non-recurring revenue or expenses under any such agreement, the cost, timing and outcomes of regulatory compliance, approvals or other regulatory actions and general and industry-specific economic conditions, particularly as affects the pharmaceutical, biopharmaceutical or biotechnology industries in the United States. Period-to-period comparisons of our historical and future financial results may not be meaningful, and investors should not rely on them as an indication of future performance. Fluctuating losses may fail to meet the expectations of securities analysts or investors. Failure to meet these expectations may cause the price of our common stock to decline.

Sales of a significant number of shares of our common stock in the public markets, or the perception that such sales could occur, could depress the market price of our common stock.

Our current trading volumes are modest, and sales of a substantial number of shares of our common stock in the public market, or the perception that these sales could occur, could cause the market price to decline. Such sales also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. As part of the Pre-Closing Dividend, we issued $37.0 million in aggregate principal amount of redeemable convertible notes. At the option of the note holders, those notes will be redeemable at any time on or before February 19, 2018 or convertible into shares of the Company at a conversion rate of $137.85 per share. As of December 31, 2016, the balance of these redeemable convertible notes was $19.4 million, convertible into approximately 141 thousand shares of our common stock. In addition, we have also registered all of the shares of common stock that we may issue under our outstanding stock options and employee stock incentive plans, and as of December 31, 2016, approximately 141 thousand shares of common stock were issuable upon the exercise of outstanding stock options at a weighted average exercise price of $128.25 per share, approximately 86 thousand additional shares of common stock were reserved for issuance under our stock option plan, and approximately 12 thousand shares of common stock were issuable upon the exercise of outstanding warrants at a weighted exercise price of $145.50 per share. Conversion or exercise of these securities into shares of our common stock will cause dilution to the other holders of our common stock, and all such stock may be sold in the public market after conversion or exercise, subject to restrictions under the securities laws, which may lead to a decline in the market price of our common stock.

Stockholders may experience dilution of their ownership interests because of future issuances of common stock under our equity incentive plans

After the completion of this offering, we expect that our Board of Directors will approve and recommend to our stockholders an increase to the number of shares of common stock reserved for issuance under our 2015 Stock Incentive Plan, or the creation of a new stock incentive plan with additional shares. Shares reserved for issuance under any such plans may be issued by the Board of Directors, or a committee of the Board of Directors, to employees, consultants and directors of the Company, including our current officers and directors. The amount of such increase has not been determined but could equal up to 20% or more of our total number of shares outstanding or issuable after this offering, including shares issuable upon the exercise of options and warrants. The final determination of the amount of such increase will be made by the Board of Directors or a committee thereof. Any issuance of such shares would dilute the ownership of our other stockholders.

Anti-takeover provisions in our charter documents and provisions of Delaware law may make an acquisition more difficult and could result in the entrenchment of management.

We are incorporated in Delaware. Anti-takeover provisions of Delaware law and our charter documents may make a change in control or efforts to remove management more difficult. Also, under Delaware law, our board of directors may adopt additional anti-takeover measures. The existence of the following provisions of Delaware

law and our restated certificate of incorporation and amended and restated bylaws could limit the price that investors might be willing to pay in the future for shares of our common stock.

Our restated certificate of incorporation authorizes our board of directors to issue up to 5,000,000 shares of preferred stock and to determine the terms of those shares of stock without any further action by our stockholders. If the board of directors exercises this power to issue preferred stock, it could be more difficult for a third-party to acquire a majority of our outstanding voting stock and vote the stock they acquire to remove management or directors.

Our restated certificate also provides staggered terms for the members of our board of directors, and that directors may be removed by stockholders only by vote of the holders of 66 2/3% of voting shares then outstanding. In addition, our amended and restated bylaws do not permit stockholders to call special or annual meetings of stockholders, or to act by written consent without a meeting. These provisions may prevent our voting stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Our board of directors could rely on Delaware law to prevent or delay an acquisition.

We are a smaller reporting company and we cannot be certain if the reduced disclosure requirements applicable to smaller reporting companies will make our common stock less attractive to investors.

We are currently a “smaller reporting company” as defined in the Securities Exchange Act of 1934, and are thus allowed to provide simplified executive compensation disclosures in our filings, are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that an independent registered public accounting firm provide an attestation report on the effectiveness of internal control over financial reporting and have certain other decreased disclosure obligations in our SEC filings. We cannot predict whether investors will find our common stock less attractive because of our reliance on any of 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 have in the past and may in the future fail to meet the continued listing requirements of The Nasdaq Capital Market. Our ability to publicly or privately sell equity securities and the liquidity of our common stock could be adversely affected if we are delisted from The Nasdaq Capital Market.

As previously disclosed, on November 29, 2016, we received a notification letter from the Listing Qualifications Department of The Nasdaq Capital Market indicating that we were not in compliance with the $1.00 minimum bid requirement. We were given a period of 180 days from the notification to regain compliance, by having the closing bid price of our common stock must exceed $1.00 for a minimum of ten (10) consecutive trading days. In connection with our effecting a 1-for-15 reverse stock split of our common stock, we regained compliance with the minimum bid price requirement for continued listing on Nasdaq within the applicable time period as of February 28, 2017.

There is no assurance, however, that we will be able to maintain compliance with Nasdaq’s listing requirements in the future. If our common stock were delisted from Nasdaq, among other things, it would likely lead to a number of negative implications, including an adverse effect on the price of our common stock, reduced liquidity in our common stock, the loss of federal preemption of state securities laws and greater difficulty in obtaining financing. In the event of a delisting, we would take actions to restore our compliance with Nasdaq’s listing requirements, but we can provide no assurance that any such action taken by us 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.

Risks Related to this Offering

Management will have broad discretion as to the use of proceeds from this offering and we may use the net proceeds in ways with which you may disagree.

We intend to use the net proceeds of this offering for net working capital and general corporate purposes, which may include development of our clinical and preclinical product candidates, intellectual property protection and enforcement, capital expenditures, investments, in-licenses and acquisitions. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Accordingly, you will be relying on the judgment of our management on the use of net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

The offering price will be set by our Board of Directors and does not necessarily indicate the actual or market value of our common stock.

Our Board of Directors will approve the offering price and other terms of this offering after considering, among other things: the number of shares authorized in our certificate of incorporation; the current market price of our common stock; trading prices of our common stock over time; the volatility of our common stock; our current financial condition and the prospects for our future cash flows; the availability of and likely cost of capital of other potential sources of capital; and market and economic conditions at the time of the offering. The offering price is not intended to bear any relationship to the book value of our assets or our past operations, cash flows, losses, financial condition, net worth or any other established criteria used to value securities. The offering price may not be indicative of the fair value of the common stock.

The Series A Preferred Stock is an unlisted security and there is no public market for it.

There is no established public trading market for the Series A Preferred Stock, and we do not expect a market to develop. In addition, the Series A Preferred Stock is not listed, and we do not intend to apply for listing of the Series A Preferred Stock on any securities exchange or trading system. Without an active market, the liquidity of the Series A Preferred Stock is limited, and investors may be unable to liquidate their investments in the Series A Preferred Stock.

The warrants may not have any value.

The warrants will be exercisable for five years from the closing date at an initial exercise price per share of $5.50. In the event that the price of a share of our common stock does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

The warrants are subject to an issuer call.

If, after the date that is 180 days after the closing date, (i) the volume weighted average price for each of 30 consecutive trading days (the “Measurement Period”), which Measurement Period commences after the date that is 180 days after the closing date, exceeds 300% of the exercise price (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and the like after the initial exercise date), (ii) the average daily volume for such Measurement Period exceeds $500,000 per trading day and, (iii) the warrant holder is not in possession of any material non-public information which was provided by the Company, then the Company may, within 1 trading day of the end of such Measurement Period, call for cancellation of all or any portion of the warrants for which an exercise notice has not yet been delivered for consideration equal to $0.001 per warrant share. The Company’s right to call the warrants shall be exercised ratably among the holders based on the then outstanding warrants. You may be unable to reinvest your proceeds from the call in an investment with a return that is as high as the return on the warrants would have been if they had not been called.

A warrant does not entitle the holder to any rights as common stockholders until the holder exercises the warrant for shares of our common stock.

Until you acquire shares of our common stock upon exercise of your warrants, the warrants will not provide you any rights as a common stockholder. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs on or after the exercise date.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains or incorporates by reference "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "should," "anticipate," "estimate," "expect," "projects," "intends," "plans," "believes" and words and terms of similar substance used in connection with any discussion of future operating or financial performance, identify forward-looking statements. Forward-looking statements included or incorporated by reference in this prospectus include, for example, statements about:

- the strategies, prospects, plans, expectations or objectives of management for future operations;
- the progress, scope or duration of the development of product candidates or programs;
- the benefits that may be derived from product candidates or the commercial or market opportunity in any target indication;
- our ability to protect intellectual property rights;
- our anticipated operations, financial position, revenues, costs or expenses, statements regarding future economic conditions or performance;
- potential regulatory filings for or approval of any of our product candidates;
- the progress of our third-party collaborations, including estimated milestones;
- our intention to seek, and the ability to enter into strategic alliances and collaborations;
- the responsibilities of our collaborators, including the responsibility to make cost reimbursement, milestone, royalty and other payments to us, and our expectations regarding our collaborators' plans with respect to our products;
- our responsibilities to our collaborators, including our responsibilities to conduct research and development, clinical trials and manufacture products;
- the results and timing of clinical trials and the possible commencement of future clinical trials;
- conditions for obtaining regulatory approval of our product candidates;
- submission and timing of applications for regulatory approval;
- the impact of U.S. Food and Drug Administration (FDA) and other government regulations on our business;
- uncertainties associated with obtaining and protecting patents and other intellectual property rights, as well as avoiding the intellectual property rights of others;
- products and companies that will compete with the products we license to third-party collaborators;
- the possibility we may commercialize our own products and build up our commercial, sales and marketing capabilities and other required infrastructure;
- our employees, including the number of employees and the continued service of key management, technical and scientific personnel;
- our future performance and our expectations regarding our ability to achieve profitability;
- our ability to remain in compliance with the listing requirements of The Nasdaq Capital Market;
- requirements for us to purchase supplies and raw materials from third parties, and the ability of third parties to provide us with required supplies and raw materials;
- sufficiency of our cash resources, anticipated capital requirements and capital expenditures and our need for additional financing;

- the composition of future revenues;
- our expectations regarding a proposed increase to our 2015 Stock Incentive Plan;
- accounting policies and estimates, including revenue recognition policies; and
- statements of belief and any statement of assumptions underlying any of the foregoing.

Forward-looking statements represent management's present judgment regarding future events. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the risk factors identified under the caption "Risk Factors", beginning on page 13 of this prospectus, and in the other the documents we have filed, or will file, with the Securities and Exchange Commission. Forward-looking statements contained in this prospectus speak as of the date hereof and the Company does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after such date.

In evaluating our business, prospective investors should carefully consider these factors in addition to the other information set forth in this prospectus, including under the caption "Risk Factors." All forward-looking statements included in this document are based on information available to us on the date hereof. We disclaim any intent to update any forward-looking statements.

In this prospectus, we refer to information regarding potential markets for our drug candidates and other industry data. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by third parties, industry, medical and general publications, government data and similar sources. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires. We believe that all such information has been obtained from reliable sources that are customarily relied upon by companies in our industry. However, we have not independently verified any such information.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $16.2 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their over-allotment option in full, we estimate that our net proceeds will be approximately $18.7 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We will not receive any additional proceeds from any future conversions of the Series A Preferred Stock. We will only receive additional proceeds from the exercise of the warrants issuable in connection with this offering if the warrants are exercised and the holders of such warrants pay the exercise price in cash upon such exercise and do not utilize the cashless exercise provision of the warrants.

We intend to use net proceeds from this offering for working capital and general corporate purposes, which may include development of our clinical and preclinical product candidates, intellectual property protection and enforcement, capital expenditures, investments, in-licenses and acquisitions. We have not yet determined the amount of net proceeds to be used specifically for any particular purpose or the timing of these expenditures. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds from the sale of these securities.

PRICE RANGE OF COMMON STOCK

Our common stock trades on The Nasdaq Capital Market under the symbol “CBIO.” The last reported sale price for our common stock on April 6, 2017 was $7.35 per share. As of April 3, 2017, we had approximately 131 holders of record of our common stock. The number of record holders was determined from the records of our transfer agent and does not include beneficial owners of common stock whose shares are held in the names of various security brokers, dealers, and registered clearing agencies. A description of the common stock that we are issuing in this offering is set forth under the heading “Description of Securities” beginning on page 53 of this prospectus.

The following table sets forth for the periods indicated the high and low sale prices per share of our common stock as reported on The Nasdaq Capital Market, but as adjusted to reflect applicable reverse stock splits:

	High	Low
Fiscal Year ended December 31, 2015		
First Quarter	$ 45.75	$37.50
Second Quarter	$ 43.65	$33.90
Third Quarter	$177.00	$33.15
Fourth Quarter	$ 85.35	$30.00
Fiscal Year ending December 31, 2016		
First Quarter	$ 47.25	$24.30
Second Quarter	$ 28.20	$18.15
Third Quarter	$ 23.40	$17.25
Fourth Quarter	$ 18.30	$ 8.10
Fiscal Year ending December 31, 2017		
First Quarter	$ 15.01	$ 4.73
Second Quarter (through April 6, 2017)	$ 8.87	$ 7.33

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors.

We will not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless and until such time as we pay dividends on each share of Series A Preferred Stock on an as-converted basis. Other than as set forth in the previous sentence, no other dividends will be paid on the Series A Preferred Stock and we will pay no dividends (other than dividends in the form of common stock) on shares of common Stock unless we simultaneously comply with the previous sentence.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2016:

- on an actual basis; and
- on an as adjusted basis to give effect to the sale of 930,000 Class A Units and 13,350 Class B Units in this offering, the application of the net proceeds of this offering and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this table together with "Item 5—Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K filed on March 8, 2017 and with our consolidated financial statements and the accompanying notes contained in this prospectus.

	As of December 31, 2016	
	Actual	As Adjusted
	(In thousands, except share data)	
Cash and cash equivalents	$ 17,064	$ 33,294
Long term liabilities, less current portion	54	54
Stockholders' equity (deficit)		
Preferred Stock, par value $0.001 per share; 5,000,000 shares authorized; no shares issued and outstanding as of December 31, 2016, actual; and 13,350 shares issued and outstanding, as adjusted	—	—
Common Stock, par value $0.001 per share; 100,000,000 shares authorized; 801,756 shares issued and outstanding as of December 31, 2016, actual; and 1,731,756 shares issued and outstanding, as adjusted	1	2
Additional paid-in capital	164,053	180,282
Accumulated deficit	(147,982)	(147,982)
Total stockholders' equity	16,071	32,300
Total capitalization	**16,125**	**32,354**

The number of shares of common stock to be outstanding before this offering and to be outstanding after this offering in the table above is based on 801,756 shares of common stock outstanding as of December 31, 2016 and excludes:

- Shares of our common stock that may be issued upon conversion of shares of Series A Preferred Stock and exercise of warrants issued in this offering;
- 140,990 shares of common stock issuable upon the exercise of stock options outstanding at a weighted average exercise price of $128.25 per share and 85,849 additional shares of common stock reserved for issuance under our stock option plan;
- 12,039 shares of common stock issuable upon the exercise of warrants outstanding at a weighted exercise price of $145.50 per share;
- 140,743 shares of common stock issuable upon conversion of outstanding redeemable convertible notes at a rate of $137.85 per share; and
- 439,880 shares of common stock sold and issued between January 1, 2017 and April 3, 2017 under the terms of the JonesTrading sales agreement for an aggregate of $5.34 million.

SECURITY OWNERSHIP OF BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of April 3, 2017, for:

(1) each person or group of affiliated persons known by us to be the beneficial owner of more than 5% of our common stock;

(2) each of our named executive officers;

(3) each of our directors; and

(4) all current executive officers and directors as a group.

Applicable percentage ownership is based on 1,241,636 shares of common stock outstanding at April 3, 2017. We have determined beneficial ownership in accordance with SEC rules. The information does not necessarily indicate beneficial ownership for any other purpose. Under these rules, the number of shares of common stock deemed outstanding includes shares issuable upon exercise of options or warrants, or the conversion of convertible notes, held by the respective person or group that may be exercised or converted within 60 days after April 3, 2017. For purposes of calculating each person's or group's percentage ownership, stock options and warrants exercisable, and notes convertible, within 60 days after April 3, 2017 are included for that person or group, but not the stock options of any other person or group.

Unless otherwise indicated and subject to applicable community property laws, to our knowledge, each stockholder named in the following table possesses sole voting and investment power over the shares listed. Unless otherwise noted below, the address of each person listed in the table is c/o Catalyst Biosciences, Inc., 260 Littlefield Ave, South San Francisco, CA 94080.

Name	Number of Shares Owned and Nature of Beneficial Ownership	Percent of Class
5% or Greater Stockholders		
Funds affiliated with Essex Woodlands Health Ventures	81,767(1)	6.57%
335 Bryant Street, 3rd Floor		
Palo Alto, CA 94301		
New Enterprise 10, Limited Partnership and affiliates	79,216(2)	6.20%
1954 Greenspring Drive, Suite 600		
Timonium, Maryland 21093		
HealthCare Ventures VIII, L.P.	71,247(3)	5.73%
47 Thorndike Street, Suite B1-11954		
Cambridge, MA 02141		
Johnson & Johnson Innovation—JJDC, Inc.	68,609(4)	5.52%
410 George Street		
New Brunswick, NJ 08901		
Morgenthaler Partners VIII, L.P.	60,369(5)	4.86%
2710 Sand Hill Road, Suite 100		
Menlo Park, CA 94025		
Rosetta Capital V L.P.	52,405(6)	4.22%
c/o The Accounts Bureau Limited		
83 Victoria Street		
London, SW1H OHW		
United Kingdom		
Directors and Named Executive Officers		
Nassim Usman, Ph.D.	17,962(7)	1.43%
Fletcher Payne	5,667(8)	*
Howard Levy, M.B.B.Ch., Ph.D., M.M.M.	1,806(9)	*
Edwin L. Madison, Ph.D.	9,895(10)	*
Harold E. Selick, Ph.D.	2,377(11)	*
Stephen A. Hill, M.D.	23,099(12)	1.83%
Augustine Lawlor	72,301(3)(13)	5.81%
Jeff Himawan, Ph.D.	81,767(1)	6.57%
John P. Richard	4,523(14)	*
Errol B. De Souza	4,560(15)	*
All Directors and Executive Officers as a Group (9 persons)	**214,062(16)**	**17.16%**

* Indicates less than 1% of class.

(1) The information reported is based on a Schedule 13D filed with the SEC on August 31, 2015 which reports that, as of August 20, 2015, (i) Essex Woodlands Health Ventures Fund VIII, L.P. (“Essex VIII”) directly holds 74,103 shares, which include 2,850 shares issuable upon the exercise of warrants within 60 days, (ii) Essex Woodlands Health Ventures Fund VIII-A, L.P. (“Essex VIII-A”) directly holds 5,342 shares which include 255 shares issuable upon the exercise of warrants within 60 days), and (iii) Essex Woodlands Health Ventures Fund VIII-A, L.P. (“Essex VIII-B”) directly holds 2,322 shares, which include 89 shares issuable upon the exercise of warrants within 60 days. Essex Woodlands Health Ventures VIII, L.P. (the “GP Partnership”) is the general partner of Essex VIII, Essex VIII-A, and Essex VIII-B. Essex Woodlands Health Ventures VIII, LLC (“Essex VIII LLC”) is the general partner of the GP Partnership. Essex VIII LLC, as the general partner of the GP Partnership, may be deemed to have sole voting investment power with respect to 81,767 shares comprising of (i) 78,623 shares and (ii) 3,144 shares that may be purchased upon the exercise of warrants within 60 days. Essex VIII LLC disclaims beneficial ownership to 81,767 shares comprising of (i) 78,623 shares and (ii) 3,144 shares that may be purchased upon the exercise of warrants within 60 days, except to the extent of its pecuniary interest. Dr. Jeff

Himawan, James Currie, Marty Sutter, Immanuel Thangaraj, Petri Vainio, Ron Eastman, Steve Wiggins and Guido Neels (the "Managers") may also be deemed to have shared dispositive power and voting power with respect to 81,767 shares comprising of (i) 78,623 shares and (ii) 3,144 shares that may be purchased upon the exercise of warrants within 60 days. The GP Partnership disclaims beneficial ownership of the shares except to the extent of its pecuniary interest therein.

(2) The information reported is based on a Schedule 13D/A filed with the SEC on March 29, 2017, which reports that, as of February 10, 2017, New Enterprise Associates 10, Limited Partnership ("NEA 10"), is the record owner of 43,462 shares of our common stock (the "NEA 10 Shares") and is deemed to beneficially own 35,754 shares of our common stock (together with the NEA 10 Shares, the "Securities") issuable upon the conversion of $4,928,707.28 in aggregate principal amount of redeemable convertible notes issued by the Company to NEA 10 on August 19, 2015, convertible within 60 days of issuance. As the sole general partner of NEA 10, NEA Partners 10, Limited Partnership ("NEA Partners 10") may be deemed to own beneficially the Securities. As the individual general partners of NEA Partners 10, each of Michael James Barrett, Peter J. Barris and Scott D. Sandell also may be deemed to own beneficially the Securities.

(3) The information reported is based on a Schedule 13D filed with the SEC on August 31, 2015 which reports that, as of August 20, 2015, Healthcare Ventures VIII, L.P. ("HCVVIII") directly beneficially owns 71,247 shares which include 1,846 shares that may be purchased upon the exercise of warrants within 60 days. Each of James H. Cavanaugh, Ph.D., Harold R. Werner, John W. Littlechild, Christopher Mirabelli, Ph.D., and Augustine Lawlor are the managing directors of HealthCare Ventures VIII, LLC ("HCPVIIILLC"), the general partner of HealthCare Partners VIII, L.P. ("HCPVIII"), which is the general partner of HCVVIII. HCPVIIILLC and HCPVIII may be deemed to indirectly beneficially own 71,247 shares, which include 1,846 shares that may be purchased upon the exercise of warrants within 60 days. Each of Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild and Lawlor may be deemed to indirectly beneficially own 71,247 shares, which include 1,846 shares that may be purchased upon the exercise of warrants within 60 days. HCVVIII, HCPVIII, HCPVIIILLC. Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild and Lawlor share the power to vote and direct the vote and to dispose of and direct the disposition of the shares beneficially owned by HCVVIII.

(4) The information reported is based on a Schedule 13G filed with the SEC on August 28, 2015 which reports that as of August 20, 2015, Johnson & Johnson Innovation-JJDC, Inc. ("JJDC") directly beneficially owns 68,609 shares, which includes 1,658 shares issuable upon exercise of warrants within 60 days. JJDC is a wholly-owned subsidiary of Johnson & Johnson, a New Jersey corporation ("J&J"). J&J may be deemed to indirectly beneficially own the securities that are directly beneficially owned by JJDC.

(5) The information reported is based on a Schedule 13D filed with the SEC on August 31, 2015 which reports that as of August 20, 2015, Morgenthaler Partners VIII, L.P. ("MP LP") is the record holder of 59,125 shares and 1,244 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days. Morgenthaler Management Partners VIII, LLC ("MMP LLC") is the general partner of MP LP and may be deemed to beneficially own the 59,125 shares and 1,244 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days. MMP LLC shares voting control and investment power over the 59,125 shares and 1,244 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days with Ralph Christoffersen, Ph.D., Robert Bellas, John Lutsi, Gary Morgenthaler, Robery Pavey and Gary Little (the "Members"), each of whom disclaim beneficial ownership over the 59,125 shares and 1,244 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days. The Members are the members of MMP LLC.

(6) The information reported is based on a Schedule 13D filed with the SEC on August 28, 2015 which reports that as of August 20, 2015, Rosetta Capital V GP Limited (the "GPCo") is the record holder of 51,455 shares and 950 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days on behalf of Rosetta Capital V LP ("Rosetta V"). Rosetta V, Rosetta Capital V GP LP (the "GP"), and Rosetta Capital Limited ("Rosetta Capital") are management vehicles within the Rosetta Capital group. Rosetta Capital has management control over all of the shares directly held by Rosetta V, and Rosetta Capital has management control over Rosetta V. The GP, the GPCo and Rosetta Capital control Rosetta V through their respective direct and indirect interests in the Rosetta V partnership and pursuant to a

management agreement, and may be deemed to share beneficial ownership of the 51,455 shares and 950 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days by virtue of their ability to collectively direct decision of Rosetta V. Rosetta Capital is the general partner of the GPCo and was appointed the manager of Rosetta V and therefore, it may be deemed to beneficially own the 51,455 shares and 950 shares that may be purchased upon the exercise of warrants that are exercisable within 60 days.

(7) Consists of (i) 4,056 shares and 1 share issuable upon the exercise of warrants within 60 days held by the Usman Family Trust, of which Dr. Usman is a co-trustee with Susan L. Usman, (ii) 1,169 shares and (iii) 12,736 shares issuable upon the exercise of options within 60 days.

(8) Consists of (i) 1,668 shares held by Charles and Nancy Payne 2000 Trust, of which Mr. Payne is a trustee and (ii) 3,999 shares issuable upon the exercise of options within 60 days.

(9) Consists of 1,806 shares issuable upon the exercise of options within 60 days.

(10) Consists of (i) 2,067 shares and (ii) 7,827 shares issuable upon the exercise of options within 60 days.

(11) Consists of (i) 1,082 shares, (ii) 1,251 shares issuable upon the exercise of options within 60 days and (iii) 19 shares issuable upon the exercise of warrants within 60 days. Also includes 25 shares held directly by Dr. Selick’s wife.

(12) Consists of (i) 1,380 shares, (ii) 20,193 shares issuable upon the exercise of options within 60 days, and (iii) 1,526 shares issuable upon the conversion of $210,397 in aggregate principal amount of redeemable convertible notes issued by the Company on August 19, 2015, as reported on a Form 4 filed on August 18, 2015, in respect of the shares, held by Dr. Hill and convertible within 60 days.

(13) Consists of 1,054 shares issuable upon the exercise of options within 60 days.

(14) Consists of (i) 217 shares, (ii) 4,128 shares issuable upon the exercise of options within 60 days and (iii) 178 shares issuable upon the conversion of $24,635 in aggregate principal amount of redeemable convertible notes convertible within 60 days.

(15) Consists of (i) 146 shares, (ii) 4,294 shares issuable upon the exercise of options within 60 days and (iii) 120 shares of common stock issuable upon the conversion of $16,543.00 in aggregate principal amount of redeemable convertible notes convertible within 60 days.

(16) Includes (i) 157,767 shares, (ii) 49,461 shares of subject to options exercisable within 60 days, 5,010 shares subject to warrants exercisable within 60 days, and 1,824 shares issuable upon the conversion of redeemable convertible notes convertible within 60 days.

DESCRIPTION OF SECURITIES

Units

We are offering 930,000 Class A Units, with each Class A Unit consisting of one share of common stock and a warrant to purchase half of one share of our common stock at an exercise price per share of $5.50, together with the shares of common stock underlying such warrants, at a public offering price of $5.00 per Class A Unit. The Class A Units will not be certificated and the shares of common stock and warrants part of such units are immediately separable and will be issued separately in this offering.

We are also offering to those purchasers whose purchase of Class A Units in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering, the opportunity to purchase, in lieu of the number of Class A Units that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%), 13,350 Class B Units. Each Class B Unit will consist of one share of Series A Preferred Stock, par value $0.001 per share, convertible into 200 shares of common stock and a warrant to purchase 100 shares of our common stock at an exercise price per share of $5.50, together with the shares of common stock underlying such shares of Series A Preferred Stock and warrants, at a public offering price of $1,000.00 per Class B Unit. The Class B Units will not be certificated and the shares of Series A Preferred Stock and the warrants part of such units are immediately separable and will be issued separately in this offering.

Description of Capital Stock

The following description of our common stock and preferred stock summarizes the material terms and provisions of the common stock and preferred stock that we may issue in connection with this offering. It may not contain all the information that is important to you. For the complete terms of our common stock and preferred stock, please refer to our Fourth Amended and Restated Certificate of Incorporation, as amended (the “restated certificate of incorporation”) and our amended and restated bylaws, which are filed as exhibits to the registration statement which includes this prospectus. The Delaware General Corporation Law (“DGCL”) may also affect the terms of these securities.

Common Stock

Under our restated certificate of incorporation, we have authority to issue 100,000,000 shares of our common stock, par value $0.001 per share. As of April 3, 2017, 1,241,636 shares of our common stock were issued and outstanding. All shares of our common stock will, when issued, be duly authorized, fully paid and nonassessable.

Dividends. Subject to preferential dividend rights of any other class or series of stock, the holders of shares of our common stock are entitled to receive dividends, including dividends of our stock, as and when declared by our board of directors, subject to any limitations imposed by law and to the rights of the holders, if any, of our preferred stock. We have never paid cash dividends on our common stock, except with respect to a cash dividend paid in connection with the closing of the merger between Targacept and Catalyst Bio. We do not anticipate paying periodic cash dividends on our common stock for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions and on such other factors as the board of directors deems relevant.

Liquidation. In the event we are liquidated, dissolved or our affairs are wound up, after we pay or make adequate provision for all of our known debts and liabilities, each holder of our common stock will be entitled to share ratably in all assets that remain, subject to any rights that are granted to the holders of any class or series of preferred stock.

Voting Rights. For all matters submitted to a vote of stockholders, each holder of our common stock is entitled to one vote for each share registered in his or her name. Except as may be required by law and in connection with some significant actions, such as mergers, consolidations, or amendments to our restated certificate of incorporation that affect the rights of stockholders, holders of our common stock vote together as a single class. There is no cumulative voting in the election of our directors, which means that, subject to any rights to elect directors that are granted to the holders of any class or series of preferred stock, a plurality of the votes cast at a meeting of stockholders at which a quorum is present is sufficient to elect a director.

Other Rights and Restrictions. Subject to the preferential rights of any other class or series of stock, all shares of our common stock have equal dividend, distribution, liquidation and other rights, and have no preference, appraisal or exchange rights, except for any appraisal rights provided by Delaware law. Furthermore, holders of our common stock have no conversion, sinking fund or redemption rights, or preemptive rights to subscribe for any of our securities. Our restated certificate of incorporation and our bylaws do not restrict the ability of a holder of our common stock to transfer his or her shares of our common stock.

The rights, powers, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of preferred stock which we may designate and issue in the future.

Listing. Our common stock is listed on The Nasdaq Capital Market under the symbol “CBIO.”

Transfer Agent and Registrar. The transfer agent for our common stock is American Stock Transfer & Trust Company, LLC. Its address is 6201 15th Avenue, Brooklyn, NY 11219.

Preferred Stock

Under our restated certificate of incorporation, we have authority, subject to any limitations prescribed by law and without further stockholder approval, to issue from time to time up to 5,000,000 shares of preferred stock, par value $0.001 per share, in one or more series. As of April 3, 2017, no shares of preferred stock were issued and outstanding.

Pursuant to our restated certificate of incorporation, we are authorized to issue “blank check” preferred stock, which may be issued from time to time in one or more series upon authorization by our board of directors. Our board of directors, without further approval of the stockholders, is authorized to fix the designation, powers, preferences, relative, participating optional or other special rights, and any qualifications, limitations and restrictions applicable to each series of the preferred stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes could, among other things, adversely affect the voting power or rights of the holders of our common stock and, under certain circumstances, make it more difficult for a third party to gain control of us, discourage bids for our common stock at a premium or otherwise adversely affect the market price of the common stock.

In connection with this offering, our board of directors will designate shares of our preferred stock as Series A Preferred Stock. The preferences and rights of the Series A Preferred Stock will be as set forth in a Certificate of Designation (the “Series A Certificate of Designation”) filed as an exhibit to the registration statement of which this prospectus is a part.

In the event of a liquidation, the holders of Series A Preferred Stock will be entitled to participate on an as-converted-to-common-stock basis with holders of the common stock in any distribution of assets of the Company to the holders of the common stock. The Series A Certificate of Designation will provide, among other things, that we shall not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless and until such time as we pay dividends on each share of Series A Preferred Stock on an as-converted basis. Other than as set forth in the previous sentence, the Series A Certificate of Designation will provide that no other dividends shall be paid on shares of Series A Preferred Stock and that we shall pay no

dividends (other than dividends in the form of common stock) on shares of common stock unless we simultaneously comply with the previous sentence. The Series A Certificate of Designation will not provide for any restriction on the repurchase of Series A Preferred Stock by us while there is any arrearage in the payment of dividends on the Series A Preferred Stock. There will be no sinking fund provisions applicable to the Series A Preferred Stock.

With certain exceptions, as described in the Series A Certificate of Designation, the Series A Preferred Stock will have no voting rights. However, as long as any shares of Series A Preferred Stock remain outstanding, the Series A Certificate of Designation will provide that we shall not, without the affirmative vote of holders of a majority of the then-outstanding shares of Series A Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Series A Preferred Stock or alter or amend the Series A Certificate of Designation, (b) increase the number of authorized shares of Series A Preferred Stock or (c) effect a stock split or reverse stock split of the Series A Preferred Stock or any like event.

Each share of Series A Preferred Stock will be convertible at any time at the holder's option into 200 shares of common stock (based on a stated value of $1,000 per share of Series A Preferred Stock and a conversion price of $5.00), which conversion ratio will be subject to adjustment for stock splits, stock dividends, distributions, subdivisions and combinations. Notwithstanding the foregoing, the Series A Certificate of Designation will further provide that we shall not effect any conversion of the Series A Preferred Stock, with certain exceptions, to the extent that, after giving effect to an attempted conversion, the holder of Series A Preferred Stock (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of Common Stock in excess of 4.99% (or, at the election of the purchaser, 9.99%) of the shares of our common stock then outstanding after giving effect to such exercise (the "Preferred Stock Beneficial Ownership Limitation").

Additionally, subject to certain exceptions, at any time prior to the three year anniversary of the issuance of the Series A Preferred Stock, subject to the Preferred Stock Beneficial Ownership Limitation, we will have the right to cause each holder of the Series A Preferred Stock to convert all or part of such holder's Series A Preferred Stock in the event that (i) the volume weighted average price of our common stock for 30 consecutive trading days (the "Measurement Period") exceeds 300% of the conversion price of the preferred stock issued in this offering (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and similar transactions), (ii) the average daily trading volume for such Measurement Period exceeds $500,000 per trading day and (iii) the holder is not in possession of any information that constitutes or might constitute, material non-public information which was provided by the Company and subject to the Preferred Beneficial Ownership Limitation. Our right to cause each holder of the Series A Preferred Stock to convert all or part of such holder's Series A Preferred Stock shall be exercised ratably among the holders of the then outstanding Series A Preferred Stock.

We do not intend to apply for listing of the Series A Preferred Stock on any securities exchange or other trading system.

The transfer agent for our Series A Preferred Stock will be American Stock Transfer & Trust Company, LLC.

Description of Warrants Included in the Units

The material terms and provisions of the warrants being offered pursuant to this prospectus are summarized below. This summary of some provisions of the warrants is not complete. For the complete terms of the warrants, you should refer to the form of warrant filed as an exhibit to the registration statement of which this prospectus is a part. Pursuant to a warrant agency agreement between us and American Stock Transfer & Trust Company, LLC, as warrant agent, the warrants will be issued in book-entry form and shall initially be represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Each Class A Unit includes a warrant to purchase half of one share of our common stock and each Class B Unit issued in this offering includes a warrant to purchase 100 shares of our common stock at a price equal to $5.50 per share at any time for up to five (5) years after the date of the closing of this offering. The warrants issued in this offering will be governed by the terms of a global warrant held in book-entry form. The holder of a warrant will not be deemed a holder of our underlying common stock until the warrant is exercised.

Subject to certain limitations as described below the warrants are immediately exercisable upon issuance on the closing date and expire on the five (5) year anniversary of the closing date. Subject to limited exceptions, a holder of warrants will not have the right to exercise any portion of its warrants if the holder (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of common stock in excess of 4.99% (or, at the election of the purchaser, 9.99%) of the shares of our Common Stock then outstanding after giving effect to such exercise.

The exercise price and the number of shares issuable upon exercise of the warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock. The warrant holders must pay the exercise price in cash upon exercise of the warrants, unless such warrant holders are utilizing the cashless exercise provision of the warrants. On the expiration date, unexercised warrants will automatically be exercised via the "cashless" exercise provision.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our common shares are converted or exchanged for securities, cash or other property, or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the warrants will be entitled to receive upon exercise of such warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised their warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the warrants.

Upon the holder's exercise of a warrant, we will issue the shares of common stock issuable upon exercise of the warrant within three trading days following our receipt of a notice of exercise, provided that payment of the exercise price has been made (unless exercised to the extent permitted via the "cashless" exercise provision). Prior to the exercise of any warrants to purchase common stock, holders of the warrants will not have any of the rights of holders of the common stock purchasable upon exercise, including the right to vote, except as set forth therein.

Warrant holders may exercise warrants only if the issuance of the shares of common stock upon exercise of the warrants is covered by an effective registration statement, or an exemption from registration is available under the Securities Act and the securities laws of the state in which the holder resides. We intend to use commercially reasonable efforts to have the registration statement, of which this prospectus forms a part, effective when the warrants are exercised. The warrant holders must pay the exercise price in cash upon exercise of the warrants unless there is not an effective registration statement or, if required, there is not an effective state law registration or exemption covering the issuance of the shares underlying the warrants (in which case, the warrants may only be exercised via a "cashless" exercise provision).

The warrants are callable by us in certain circumstances. Subject to certain exceptions, in the event that the warrants are outstanding, if, after the closing date, (i) the volume weighted average price of our common stock for each of 30 consecutive trading days (the "Measurement Period"), which Measurement Period commences on the closing date, exceeds 300% of the exercise price (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and similar transactions after the initial exercise date), (ii) the average daily trading volume for such Measurement Period exceeds $500,000 per trading day and (iii) the warrant holder is not in possession of any information that constitutes or might constitute, material non-public information which was

provided by the Company, and subject to the Beneficial Ownership Limitation, then we may, within one trading day of the end of such Measurement Period, upon notice (a "Call Notice"), call for cancellation of all or any portion of the warrants for which a notice of exercise has not yet been delivered (a "Call") for consideration equal to $0.001 per warrant share. Any portion of a warrant subject to such Call Notice for which a notice of exercise shall not have been received by the Call Date (as hereinafter defined) will be canceled at 6:30 p.m. (New York City time) on the tenth trading day after the date the Call Notice is sent by the Company (such date and time, the "Call Date"). Our right to call the warrants shall be exercised ratably among the holders based on the then outstanding warrants.

We do not intend to apply for listing of the warrants on any securities exchange or other trading system.

Outstanding Debt Securities

On August 19, 2015, we issued to our stockholders non-interest bearing redeemable convertible notes (the "Convertible Notes") in the aggregate principal amount of $37.0 million. The Convertible Notes do not bear interest. The principal amounts under the Convertible Notes are convertible, at the option of each noteholder, into cash or into shares of our common stock at a conversion rate of $137.85 per share, and are payable in cash, if not previously redeemed or converted, at maturity on February 19, 2018, the 30-month anniversary of the closing of the issuance of the Convertible Notes.

On August 19, 2015, we also entered into an indenture (the "Convertible Notes Indenture") with American Stock Transfer & Trust Company, LLC, as trustee, and an escrow agreement with American Stock Transfer & Trust Company, LLC and Delaware Trust Company, LLC, as escrow agent, under which $37.0 million, which represents the initial principal amount of the Convertible Notes, was deposited in a segregated escrow account for the benefit of the holders of the Convertible Notes in order to facilitate the payment of the Convertible Notes upon redemption or at maturity. The Convertible Notes are our secured obligation, and the Convertible Notes Indenture does not limit its other indebtedness, secured or unsecured.

Holders of the Convertible Notes may submit conversion notices, which are irrevocable, instructing the trustee to convert such the Convertible Notes into shares of the common stock at a conversion price of $137.85 per share. Following each conversion date, we will issue the number of whole shares of common stock issuable upon conversion as promptly as practicable (and in any event within 10 business days). The trustee will in turn release to us the respective amount of restricted cash to cover the stock issuance.

As of April 3, 2017, Convertible Notes in an aggregate principal amount of approximately $12.7 million remained outstanding.

Outstanding Warrants

Prior to this offering, as of April 3, 2017, we have outstanding warrants to purchase common stock as follows: (i) at any time until the 5-year anniversary of the original date of issuance in 2014, warrants to purchase an aggregate of 2,487 shares of our common stock at an exercise price of $499.05 per share, (ii) at any time until the 5-year anniversary of the original date of issuance in 2015, warrants to purchase an aggregate of 9,467 shares of our common stock at an exercise price of $49.91 per share and (iii) at any time until seven years from the date of the completion of the merger between Targacept and Catalyst Bio, a warrant to purchase 85 shares of our common stock at an exercise price of $392.70. As of December 31, 2016, the fair value of these warrants was immaterial.

Certain Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including future public or private

offerings to raise additional capital or to facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved preferred stock may enable our board of directors to issue shares of preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, if we issue additional preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that holders of common stock will receive dividend payments or payments upon liquidation.

Anti-Takeover Effects of Provisions of Our Charter Documents

Our restated certificate of incorporation provides for our board of directors to be divided into three classes serving staggered terms.

Approximately one-third of our board of directors will be elected each year. The provision for a classified board could prevent a party who acquires control of a majority of the outstanding voting stock from obtaining control of the board of directors until the second annual stockholders meeting following the date the acquirer obtains the controlling stock interest. The classified board provision could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of Catalyst and could increase the likelihood that incumbent directors will retain their positions. Our restated certificate of incorporation provides that directors may be removed with or without cause by the affirmative vote of the holders of at least 66 2/3% of the voting power of all outstanding stock.

Our restated certificate of incorporation requires that certain amendments to the restated certificate of incorporation and amendments by the stockholders of our bylaws require the affirmative vote of at least 66 2/3% of the voting power of all outstanding stock. These provisions could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company and could delay changes in management.

Our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual stockholders meeting, including proposed nominations of persons for election to our board of directors. At an annual stockholders meeting, stockholders may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors. Stockholders may also consider a proposal or nomination by a person who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given to the Secretary of the Company timely written notice, in proper form, of his or her intention to bring that business before the annual stockholders meeting. The amended and restated bylaws do not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting of the stockholders. However our bylaws may have the effect of precluding the conduct of business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer’s own slate of directors or otherwise attempting to obtain control of the Company.

Our amended and restated bylaws provide that only our board of directors, the chairperson of the board, the President or the Chief Executive Officer may call a special meeting of stockholders. Because our stockholders do not have the right to call a special meeting, a stockholder could not force stockholder consideration of a proposal over the opposition of our board of directors by calling a special meeting of stockholders prior to such time as a majority of our board of directors, the chairperson of the board, the President or the Chief Executive Officer believed the matter should be considered or until the next annual meeting provided that the requestor met the notice requirements. The restriction on the ability of stockholders to call a special meeting means that a proposal to replace the board also could be delayed until the next annual stockholders meeting.

Our restated certificate of incorporation does not allow stockholders to act by written consent without a meeting. Without the availability of stockholder’s actions by written consent, a holder controlling a majority of our capital stock would not be able to amend our bylaws or remove directors without holding a stockholders’ meeting.

Anti-Takeover Effects of Provisions of Delaware Law

We are subject to the provisions of Section 203 of the DGCL, or Section 203. Under Section 203, we would generally be prohibited from engaging in any business combination with any interested stockholder for a period of three years following the time that this stockholder became an interested stockholder unless:

- prior to this time, our board of directors 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 commenced, excluding shares owned by persons who are directors and also officers, and by 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
- at or subsequent to such time, the business combination is approved by our board of directors and authorized at a special or annual stockholders meeting, 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.

Under Section 203, a “business combination” includes:

- any merger or consolidation involving 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;
- any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder, subject to limited exceptions;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of 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 provided by or through the corporation.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by such entity or person.

Limitation of Liability and Indemnification

Our restated certificate of incorporation provides that our directors shall not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability for breach of the director’s duty of loyalty to us or our stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, for payment of dividends or approval of stock purchases or redemptions that are prohibited by the DGCL, or for any transaction from which the director derived an improper personal benefit.

Under the DGCL, our directors have a fiduciary duty to us that is not eliminated by this provision of the restated certificate of incorporation and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available. This provision also does not affect our directors’ responsibilities under any other laws, such as federal securities laws or state or federal environmental laws.

Section 145 of the DGCL empowers a corporation to indemnify its directors and officers against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by

them in connection with any action, suit or proceeding brought by third parties by reason of the fact that they were or are directors or officers of the corporation, if they acted in good faith, in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe that their conduct was unlawful. The DGCL provides further that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. Our restated certificate of incorporation provides that, to the fullest extent permitted by Section 145 of the DGCL, we shall indemnify any person who is or was a director or officer of us, or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against the expenses, liabilities or other matters referred to in or covered by Section 145 of the DGCL. Our amended and restated bylaws provide that we will indemnify any person who was or is a party or threatened to be made a party to any proceeding by reason of the fact that such person is or was a director or officer of us or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise to the fullest extent permitted by the DGCL.

In addition, we have entered into indemnification agreements with each of our directors and with certain of our executive officers. Pursuant to the indemnification agreements, we has agreed to indemnify and hold harmless these directors and officers to the fullest extent permitted by the DGCL. The agreements generally cover expenses that a director or officer incurs or amounts that a director or officer becomes obligated to pay because of any proceeding to which he or she is made or threatened to be made a party or participant by reason of his or her service as a current or former director, officer, employee or agent of the Company. The agreements also provide for the advancement of expenses to the directors and officers subject to specified conditions. There are certain exceptions to our obligation to indemnify the directors and officers, including any intentional malfeasance or act where the director or officer did not in good faith believe he or she was acting in our best interests, with respect to "short-swing" profit claims under Section 16(b) of the 1934 Act and, with certain exceptions, with respect to proceedings that he or she initiates.

Section 145 of the DGCL also empowers a corporation to purchase insurance for its officers and directors for such liabilities. We maintain liability insurance for our officers and directors.

UNDERWRITING

We have entered into an underwriting agreement dated April 7, 2017 with Ladenburg Thalmann & Co. Inc., as the representative of the underwriters (the "representative") named below and the sole book-running manager of this offering. Subject to the terms and conditions of the underwriting agreement, the underwriters have agreed to purchase the number of our securities set forth opposite its name below.

Underwriters	Class A Units	Class B Units
Ladenburg Thalmann & Co. Inc.	930,000	13,350
Total	930,000	13,350

A copy of the underwriting agreement has been filed as an exhibit to the registration statement of which this prospectus is part.

We have been advised by the underwriters that they propose to offer the units directly to the public at the public offering price set forth on the cover page of this prospectus. The underwriters may sell Class A Units or Class B Units separately to purchasers or may sell a combination of Class A Units and Class B Units to purchasers in any proportion. Any securities sold by the underwriters to securities dealers will be sold at the public offering price less a selling concession not in excess of 4.8% of the public offering price of such securities.

The underwriting agreement provides that subject to the satisfaction or waiver by the representative of the conditions contained in the underwriting agreement, the underwriters are obligated to purchase and pay for all of the units offered by this prospectus.

No action has been taken by us or the underwriters that would permit a public offering of the units, or the shares of common stock, shares of preferred stock, shares of common stock underlying the preferred stock and warrants to purchase common stock included in the units, in any jurisdiction outside the United States where action for that purpose is required. None of our securities included in this offering may be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sales of any of the securities offered hereby be distributed or published in any jurisdiction except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons who receive this prospectus are advised to inform themselves about and to observe any restrictions relating to this offering of securities and the distribution of this prospectus. This prospectus is neither an offer to sell nor a solicitation of any offer to buy the securities in any jurisdiction where that would not be permitted or legal.

The underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Underwriting Discount and Expenses

The following table summarizes the underwriting discount and commission to be paid to the underwriters by us.

	Per Class A Unit(1)	Per Class B Unit(1)	Total
Public offering price	$ 5.00	$ 1,000.00	$18,000,000.00
Underwriting discount to be paid to the underwriters by us(2)	$ 0.40	$ 80.00	$ 1,440,000.00
Proceeds to us (before expenses)	$ 4.60	$ 920.00	$16,560,000.00

(1) The public offering price and underwriting discount corresponds to (x) in respect of the Class A Units (i) a public offering price per share of common stock of $4.995 and (ii) a public offering price per warrant of $0.01 per whole share of common stock and (y) in respect of the Class B Units (i) a public offering price per share of Series A Preferred Stock of $999.00 and (ii) a public offering price per warrant of $0.01 per whole share of common stock.

(2) We have granted a 45 day option to the underwriter to purchase additional shares of common stock and/or warrants to purchase shares of common stock (up to 15% of the number of shares of common stock (including the number of shares of common stock issuable upon conversion of shares of Series A Preferred Stock) and the number of shares of common stock underlying the warrants sold in the primary offering) at the public offering price per share of common stock and the public offering price per warrant set forth above less the underwriting discounts and commissions, solely to cover over-allotments, if any.

We estimate the total expenses payable by us for this offering to be approximately $1,770,000 which amount includes (i) the underwriting discount of $1,440,000 ($1,656,000 if the underwriters' over-allotment option is exercised in full) and (ii) reimbursement of the accountable expenses of the representative equal to $120,000 including the legal fees of the representative being paid by us and (iii) other estimated company expenses of approximately $210,000 which includes legal, accounting, printing costs and various fees associated with the registration and listing of our shares.

The securities we are offering are being offered by the underwriters subject to certain conditions specified in the underwriting agreement.

Over-allotment Option

We have granted to the underwriters an option exercisable not later than 45 days after the date of this prospectus to purchase up to a number of additional shares of common stock and/or warrants to purchase shares of common stock not to exceed 15% of the number of shares of common stock sold in the primary offering (including the number of shares of common stock issuable upon conversion of shares of Series A Preferred Stock, but excluding shares of common stock underlying the warrants issued in this offering and any shares of common stock issued upon any exercise of the underwriter's over-allotment option) and/or 15% of the warrants sold in the primary offering at the public offering price per share of common stock and the public offering price per warrant set forth on the cover page hereto less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover overallotments, if any, made in connection with this offering. If any additional shares of common stock and/or warrants are purchased pursuant to the over-allotment option, the underwriters will offer these shares of common stock and/or warrants on the same terms as those on which the other securities are being offered.

Determination of Offering Price

Our common stock is currently traded on The Nasdaq Capital Market under the symbol "CBIO." On April 6, 2017 the closing price of our common stock was $7.35 per share. We do not intend to apply for listing of the Series A Preferred Stock or the warrants on any securities exchange or other trading system.

The public offering price of the securities offered by this prospectus will be determined by negotiation between us and the underwriters. Among the factors that will be considered in determining the public offering price of the shares:

- our history and our prospects;
- the industry in which we operate;
- our past and present operating results;
- the previous experience of our executive officers; and
- the general condition of the securities markets at the time of this offering.

The offering price stated on the cover page of this prospectus should not be considered an indication of the actual value of the shares of common stock or shares of preferred stock sold in this offering. That price is subject to change as a result of market conditions and other factors and we cannot assure you that the shares of common stock sold in this offering can be resold at or above the public offering price.

Lock-up Agreements

Our officers and directors and certain affiliated funds, representing 23.7% of our outstanding shares, are expected to agree with the representative to be subject to a lock-up period of 90 days following the date of this prospectus. This means that, during the applicable lock-up period, such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock. Certain limited transfers are permitted during the lock-up period if the transferee agrees to these lock-up restrictions. We have also agreed, in the underwriting agreement, to similar lock-up restrictions on the issuance and sale of our securities for 90 days following the effectiveness of the underwriting agreement, although we will be permitted to issue stock options or stock awards to directors, officers and employees under our existing plans. The lock-up period is subject to an additional extension to accommodate for our reports of financial results or material news releases. The representative may, in its sole discretion and without notice, waive the terms of any of these lock-up agreements.

Other Relationships

Upon completion of this offering, we have granted the representative a right of first refusal to act as lead or co-lead bookrunner or lead or co-lead placement agent in connection with any subsequent public or private offering of equity securities or other capital markets financing by us. This right of first refusal extends for 12 months from the closing date of this offering. The terms of any such engagement of the representative will be determined by separate agreement.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Stabilization, Short Positions and Penalty Bids

The underwriters may engage in syndicate covering transactions stabilizing transactions and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of our common stock:

- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Such a naked short position would be closed out by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.
- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specific maximum and are engaged in for the purpose of preventing or retarding a decline in the market price of the shares of common stock while this offering is in progress.
- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These syndicate covering transactions, stabilizing transactions, and penalty bids may have the effect of raising or maintaining the market prices of our securities or preventing or retarding a decline in the market prices of our securities. As a result the price of our common stock may be higher than the price that might otherwise exist in the open market. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on The Nasdaq Capital Market, in the over-the-counter market or on any other trading market and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriters also may engage in passive market making transactions in our common stock in accordance with Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of the distribution. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for that security. However, if all independent bids are lowered below the passive market maker's bid that bid must then be lowered when specific purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Neither we, nor 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 prices of our securities. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transactions, once commenced will not be discontinued without notice.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including certain liabilities arising under the Securities Act or to contribute to payments that the underwriters may be required to make for these liabilities.

LEGAL MATTERS

Certain legal matters relating to the issuance of the securities offered by this prospectus will be passed upon for us by Morrison & Foerster LLP, Palo Alto, California. Certain legal matters in connection with this offering will be passed upon for the underwriter by Ellenoff Grossman & Schole LLP.

EXPERTS

The consolidated balance sheets of Catalyst Biosciences, lnc. as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive loss, convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the years in the two-year period ended December 31, 2016, have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-1 with the SEC covering the units we are offering by this prospectus. This prospectus does not include all of the information contained in the registration statement. You should refer to the registration statement and its exhibits for additional information. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete and you should refer to the exhibits filed as part of the registration statement for copies of the actual contract, agreement or other document.

We file annual, quarterly and other periodic reports, proxy statements and other information with the Securities and Exchange Commission. You can read our Securities and Exchange Commission filings, including this registration statement, over the Internet at the Securities and Exchange Commission's website at www.sec.gov. You may also read and copy any document we file with the Securities and Exchange Commission at its public reference facilities at 100 F Street NE, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the Securities and Exchange Commission at 100 F Street NE, Washington, D.C. 20549. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

Our Internet address is www.catalystbiosciences.com. There we make available free of charge, on or through the investor relations section of our website, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with the Securities and Exchange Commission. The information found on our website is not part of this prospectus and investors should not rely on any such information in deciding whether to invest.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We have elected to incorporate the following documents into this prospectus, together with all exhibits filed therewith or incorporated therein by reference, to the extent not otherwise amended or superseded by the contents of this prospectus:

- our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on March 8, 2017; and
- our Current Reports on Form 8-K filed with the SEC on February 2, 2017 and February 10, 2017.

In addition, we incorporate by reference in this prospectus any future filings we make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act (excluding any information furnished and not filed with the SEC) after the date on which the registration statement that includes this prospectus was initially filed with the SEC (including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement) and until all offerings under this prospectus are terminated.

Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this prospectus or in any other subsequently filed document which is also incorporated or deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. You may request a copy of these filings (other than an exhibit to a filing unless that exhibit is specifically incorporated by reference into that filing) at no cost by writing, telephoning or e-mailing us at the following address, telephone number or e-mail address:

Catalyst Biosciences, Inc.
260 Littlefield Avenue
South San Francisco, CA 94080
Tel: (650) 871-0761
Attn: Fletcher Payne
fpayne@catbio.com

Copies of these filings are also available through the “Investors” section of our website at www.catalystbiosciences.com. For other ways to obtain a copy of these filings, please refer to “Prospectus Summary—Available Information.”

930,000 Class A Units consisting of common stock and warrants and
13,350 Class B Units consisting of shares of Series A Preferred Stock and warrants
(and 4,470,000 shares of common stock underlying shares of
Series A Preferred Stock and warrants)

PROSPECTUS

Ladenburg Thalmann

April 7, 2017