AmpliPhi Biosciences Corp
Form S-1/A
October 09, 2018
TABLE OF CONTENTS
As filed with the Securities and Exchange Commission on October 9, 2018
Registration No. 333-226959

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

Amendment No. 2
to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

AmpliPhi Biosciences Corporation
(Exact Name of Registrant as Specified in Its Charter)

Washington	2836	91-1549568
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

3579 Valley Centre Drive, Suite 100
San Diego, California 92130
(858) 829-0829
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Paul C. Grint, M.D.
Chief Executive Officer
AmpliPhi Biosciences Corporation
3579 Valley Centre Drive, Suite 100
San Diego, California 92130
(858) 829-0829
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

Thomas A. Coll, Esq. Asa M. Henin, Esq. Cooley LLP 4401 Eastgate Mall San Diego, California 92121 (858) 550-6000	Rick A. Werner, Esq. Haynes and Boone, LLP 30 Rockefeller Plaza, 26th Floor New York, NY 10112 (212) 659-7300

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

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

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

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

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

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

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

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

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered(1)	Proposed maximum aggregate offering price(2)	Amount of registration fee
Common stock, $0.01 par value per share	$ 13,662,000(3)(4)	
Pre-funded warrants to purchase shares of common stock and common stock issuable upon exercise thereof	$ 11,880,000(4)	
Common warrants to purchase shares of common stock and common stock issuable upon exercise thereof	$ 13,965,600(3)	
Total	$ 27,627,600	$ 3,349(5)

(1)
Pursuant to Rule 416 under the Securities Act of 1933, as amended, the securities being registered hereunder include such indeterminate number of additional securities as may be issuable to prevent dilution resulting from stock splits, stock dividends or similar transactions.

(2)
Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

(3)
Includes the offering price of additional securities that the underwriter has an option to purchase.

(4)
The proposed maximum aggregate offering price of the common stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the aggregate offering price of the pre-funded warrants offered and sold in the offering (plus the aggregate exercise price of the common stock issuable upon exercise of the pre-funded warrants), and as such the proposed aggregate maximum offering price of the common stock and pre-funded warrants

(including the common stock issuable upon exercise of the pre-funded warrants), if any, is $13,662,000.

(5)
Of this amount, $1,504 was previously paid.

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

TABLE OF CONTENTS

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS SUBJECT TO COMPLETION, DATED OCTOBER 9, 2018

13,200,000 Shares of Common Stock
Pre-Funded Warrants to Purchase Shares of Common Stock
Common Warrants to Purchase 13,200,000 Shares of Common Stock

We are offering up to 13,200,000 shares of our common stock and common warrants to purchase an aggregate of 13,200,000 shares of our common stock (and the shares of common stock that are issuable from time to time upon exercise of the common warrants). We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise 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 immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, pre-funded warrants, in lieu of shares of common stock that would otherwise result in such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant and the accompanying common warrant will be equal to the price at which a share of common stock and accompanying common warrant are sold to the public in this offering, minus $0.01, and the exercise price of each pre-funded warrant will be $0.01 per share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. Each share of common stock and pre-funded warrant is being sold together with a common warrant to purchase one share of our common stock, at an exercise price of $ per share. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Because we will issue a common warrant for each share of our common stock and for each pre-funded warrant to purchase one share of our common stock sold in this offering, the number of common warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold. The common warrants will be exercisable immediately and will expire five years from the date of issuance. The shares of common stock and pre-funded warrants, and the accompanying common warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. Our common stock is listed on the NYSE American under the symbol "APHB." On October 8, 2018, the last reported sale price of our common stock on the NYSE American was $0.91 per share. The actual public offering price per share of common stock and accompanying common warrant and any pre-funded warrant and accompanying common warrant, as the case may be, will be determined between us and the underwriter at the time of pricing, and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final offering price. There is no established public trading market for the pre-funded warrants or common warrants, and we do not expect a market to develop. In addition, we do not intend to apply for a listing of the pre-funded warrants or common warrants on any national securities exchange or other nationally recognized trading system.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings.

	Per Pre-Funded Warrant	Per Common Warrant	
Per Share			Total

Public offering price(1)	$	$	$	$
Underwriting discounts and commissions(2)	$	$	$	$
Proceeds, before expenses, to us	$	$	$	$

(1)
The public offering price is $ per share of common stock, $ per pre-funded warrant and $0.01 per accompanying common warrant.

(2)
In addition, we have agreed to pay the underwriter a management fee equal to 1.0% of the aggregate gross proceeds from this offering, and to reimburse the underwriter for certain expenses. See "Underwriting" for additional information.

The offering is being underwritten on a firm commitment basis. We have granted the underwriter an option for a period of 30 days from the date of this prospectus to purchase up to an additional 1,980,000 shares of our common stock and/or common warrants to purchase up to an aggregate of an additional 1,980,000 shares of common stock, in each case at the public offering price less the underwriting discount and commissions. If the underwriter exercises this option in full, the total underwriting discounts and commissions payable by us will be $, and the total proceeds to us, before expenses, will be $.

Investing in our securities involves a high degree of risk. See the section entitled "Risk Factors" beginning on page 11 of this prospectus and in the documents incorporated by reference into this prospectus for a discussion of risks that should be considered in connection with an investment in our securities.

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

The delivery of the shares of common stock and any pre-funded warrants and common warrants to purchasers is expected to be made on or about October , 2018.

Sole Book-Running Manager

H.C. Wainwright & Co.

The date of this prospectus is October , 2018

TABLE OF CONTENTS

TABLE OF CONTENTS

We have not, and the underwriter has not, authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the securities offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: We have not, and the underwriter has not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than 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 securities and the distribution of this prospectus outside the United States.

TABLE OF CONTENTS

PROSPECTUS SUMMARY

This summary highlights information contained in other parts of this prospectus or incorporated by reference into this prospectus from our filings with the Securities and Exchange Commission, or SEC, listed in the section of the prospectus entitled "Incorporation of Certain Information by Reference." Because it is only a summary, it does not contain all of the information that you should consider before purchasing our securities in this offering and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere or incorporated by reference into this prospectus. You should read the entire prospectus, the registration statement of which this prospectus is a part, and the information incorporated by reference herein in their entirety, including the "Risk Factors" and our financial statements and the related notes incorporated by reference into this prospectus, before purchasing our securities in this offering. Unless the context requires otherwise, references in this prospectus to "AmpliPhi," "we," "us" and "our" refer to AmpliPhi Biosciences Corporation together with its wholly owned subsidiaries.

Overview

Our Company

We are a clinical-stage biotechnology company focused on precisely targeted bacteriophage therapeutics for patients with serious and life-threatening antibiotic-resistant bacterial infections. Phages have a powerful and highly selective mechanism of action that enables them to bind to and kill specific bacteria. We believe that phages represent a promising means to treat bacterial infections, especially those that have developed resistance to current therapies, including the so-called multi-drug-resistant or "superbug" strains of bacteria.

We are a leading developer of bacteriophage therapeutics. We are combining our expertise in the manufacture of drug-quality bacteriophages and our proprietary approach and expertise in identifying, characterizing and developing naturally occurring bacteriophages to develop state-of-the-art therapeutics. We are developing bacteriophage products to combat multi- or pan-drug-resistant bacterial pathogens, leveraging advances in sequencing and molecular biology. We have developed certain bacteriophage combinations that we believe maximize efficacy and minimize development of resistance. We currently have two product candidates in clinical development, AB-SA01 and AB-PA01 for the treatment of Staphylococcus aureus, or S. aureus, infections, including methicillin-resistant S. aureus, or MRSA, and Pseudomonas aeruginosa, or P. aeruginosa, infections, respectively. We intend to develop both product candidates for the treatment of serious or life-threatening, multi-drug resistant infections.

We believe our bacteriophage technology may have unique application in the area of targeted medicine, and in May 2017, we initiated a new strategic emphasis on targeted therapies for serious or life-threatening antibiotic-resistant infections. In particular, we believe our bacteriophage technology can be used to develop precisely targeted therapies for patients who suffer from serious or life-threatening antibiotic-resistant bacterial infections and who have limited or no other satisfactory treatment options. Moreover, we believe our ability to target bacteriophage therapies for antibiotic-resistant infections, combined with the ability of bacteriophage to disrupt biofilm and having the potential to re-sensitize drug-resistant populations to antibiotics, represents what could be a powerful tool against the growing global challenge of antibiotic-resistant infections.

Under existing single-patient expanded access guidelines (also referred to as "compassionate use"), established by the regulatory agencies, we have provided targeted phage therapies to patients suffering from severe antibiotic-resistant infections who have failed prior antibiotic therapies. We believe this strategic approach not only provides potential benefit to patients who have few or no other acceptable therapeutic options, but also generates the clinical and microbiological data from these cases that we expect to support the potential validation of the clinical utility of phage therapy, identify the most promising indications for further clinical development of our AB-SA01 and AB-PA01 product candidates for S. aureus and P. aeruginosa, define optimal treatment regimens, and inform our discussions with the U.S. Food and Drug Administration, or FDA, and other regulatory agencies in 2018 or later on defining a potential path to market approval. We are initially making targeted phage therapies available under the appropriate regulatory expanded access guidelines in the United States and in Australia, where we collaborate with

TABLE OF CONTENTS

select leading hospitals and key infectious disease physician opinion leaders to identify eligible patients. We believe that the United States and Australia have favorable regulatory frameworks and clinical expertise with respect to treating patients under single-patient expanded access guidelines.

Clinical Results for Expanded Access Program

On September 17, 2018, we announced updated topline clinical results for our ongoing single-patient expanded access program. 84% of patients achieved treatment success (physician's assessment) at the end of bacteriophage therapy, defined as complete resolution or significant improvement of baseline signs and symptoms.

We have now received clinical outcome results for 21 of the patents to whom we have provided our investigational bacteriophage therapeutics, at seven hospitals, with serious or life-threatening infections not responding to antibiotic therapy. Of the 21 patients, 57% were male and 43% were female, and the mean age was 57 years old with patients ranging from 16 years old to 96 years old. These patients were treated with AB-SA01 or AB-PA01, along with antibiotics, under single-patient expanded access programs in the United States (Emergency INDs, per the FDA) or Australia (Special Access Scheme, per the Australian Therapeutic Goods Administration).

Through our expanded access program, 15 patients with serious S. aureus infections were treated with AB-SA01 and six patients with serious P. aeruginosa infections were treated with AB-PA01. The treated patients' infections included bacteremia and septicemia, native and prosthetic valve endocarditis, recurrent pneumonia (cystic fibrosis, post-transplant, VAPB), ventilator-associated pneumonia, prosthetic joint infection, ventricular assist device infection, septicemia due to burns, chronic rhinosinusitis and others. Over 1,000 bacteriophage doses were administered as part of the expanded access program including, over 400 doses of AB-SA01, of which over 300 doses were administered intravenously. Treatment of AB-SA01 was well-tolerated in all patients with no treatment-related serious adverse events, or SAEs. Over 600 doses of AB-PA01 were administered, including over 400 doses administered intravenously. Treatment of AB-PA01 was well-tolerated in five patients. One patient discontinued treatment of AB-PA01 due to Grade 1 and 2 adverse events, which resolved within 18 hours. There were no treatment-related SAEs.

Of the patients in the modified intent-to-treat population, or mITT, 84% (16 out of 19) achieved treatment success at the end of therapy. Treatment success, as determined by the treating physician, was defined as a complete resolution or significant improvement of baseline signs and symptoms. mITT population was defined as all patients who met the criteria for clinical diagnosis, whose bacterial isolate was susceptible to phage and who received at least one dose of phage.

The following chart shows the safety and tolerability results of our expanded access program:

TABLE OF CONTENTS

The following chart shows the clinical outcomes at the end of therapy of our expanded access program:

The following chart shows the patient disposition from our expanded access program:

AB-SA01 (S. Aureus) Clinical Development Plan

We conducted meetings with the FDA in February 2017 and August 2018 regarding our proposed clinical development of AB-SA01. During the February 2017 meeting with the FDA, we received feedback on our previously submitted detailed development proposal to commence a Phase 2 trial with AB-SA01 for the treatment of antibiotic-resistant S. aureus infections in patients with chronic rhinosinusitis. In the official minutes from that meeting, the FDA acknowledged that phage therapy is an exciting approach for treatment of multi-drug-resistant organisms and expressed a commitment to addressing the unique regulatory challenges that might arise during product development. In addition, the FDA Center for Biologics Evaluation and Research stated that the clinical safety and effectiveness data collected during development, including from emergency case studies, could inform future discussions for clinical development and ultimately, the regulatory pathway to approval. During the August 2018 meeting with the FDA, which was a Type B pre-IND meeting, we shared the clinical and microbiological results for patients treated with AB-SA01 under our single-patient expanded access program in 2017 and 2018 and the proposed design of randomized controlled clinical trials that we developed based on input from key infectious disease physician opinion leaders, in order to establish a Phase 2 development plan for multiple indications, including bacteremia and prosthetic joint infection.

Based on the FDA's feedback reflected in the official minutes from the August 2018 Type B pre-IND meeting, we currently plan to initiate the first randomized clinical trial of our AB-SA01 product candidate in early 2019. The clinical trial is expected to enroll approximately 100 patients. The FDA expressed general agreement with the proposed clinical trial designs, which will be a Phase 1/2 randomized, controlled clinical trial to evaluate the safety and efficacy of AB-SA01, administered intravenously with the best available

TABLE OF CONTENTS

antibiotic therapy, compared to placebo plus best available antibiotic therapy, in approximately 100 patients with S. aureus bacteremia. The second clinical trial will be a Phase 1/2 randomized, controlled clinical trial to evaluate the safety and efficacy of AB-SA01, administered by intra-articular injection and then intravenously with the best available antibiotic therapy, compared to placebo plus the best available antibiotic therapy, in approximately 100 patients with a hip or knee prosthetic joint infection due to S. aureus as an adjunct to surgical treatment. We intend to produce our proprietary bacteriophage therapeutics for the planned clinical trials at our wholly owned manufacturing facility, which is good manufacturing practices (GMP) certified by the governmental authorities in the jurisdiction in which it operates. We believe our GMP-facility has the capacity to produce our proprietary bacteriophage therapeutics for the planned clinical trials through an anticipated biologics license application filing and potential approval.

Based on the current FDA feedback during the Type B pre-IND meeting, no additional clinical or nonclinical data are required to proceed with the two proposed randomized clinical trials. Furthermore, we continue to investigate whether AB-SA01 may be eligible for Fast Track Designation and for approval under the Limited Population pathway, or LPAD pathway, which is intended to facilitate development of therapeutics to treat serious or life-threatening infections in a limited population of patients with unmet need. Products eligible for approval under the LPAD pathway may follow streamlined approaches for clinical development, which may involve smaller, shorter, or fewer clinical trials to help reduce the overall product development timeline.

AB-PA01 (P. aeruginosa) Clinical Development Plan

In September 2018, we received positive feedback, via written response, from the FDA regarding our development plans for AB-PA01, without the need for a Type B pre-IND meeting. The FDA expressed general agreement with our proposed clinical trial designs and, based on the current FDA feedback, no additional clinical or nonclinical data are required to proceed with two proposed randomized clinical trials. The first such clinical trial would be a Phase 1/2 randomized, controlled clinical trial to evaluate the safety and efficacy of AB-PA01, administered intravenously with the best available antibiotic therapy, compared to placebo plus best available antibiotic therapy, in approximately 100 patients with hospital-acquired and ventilator-associated pneumonia (HAP/VAP) due to P. aeruginosa. The second clinical trial would be a Phase 1/2 randomized, controlled clinical trial to evaluate the safety and efficacy of AB-PA01, administered intravenously with the best available antibiotic therapy, compared to placebo plus best available antibiotic therapy, in approximately 100 patients with P. aeruginosa bacteremia.

We intend to seek non-dilutive financing and explore other opportunities to conduct these clinical trials.

TABLE OF CONTENTS

Our Pipeline

Our development pipeline of product candidates is as follows:

AB-SA01 covers approximately 95% of S. aureus strains, including multi-drug-resistant infections, and AB-PA01 covers approximately 80% of P. aeruginosa strains, including multi-drug-resistant infections.

The Need for New Anti-Infective Therapies

The rapid and continuous emergence of antibiotic-resistant bacteria has become a global crisis. Despite this crisis, the number of novel anti-infective therapies currently in development is at historically-low levels. Based on our market research, we estimate that there are more than 300,000 serious S. aureus infections in the United States each year, including approximately 150,000 cases of S. aureus bacteremia each year that lead to approximately 30,000 deaths each year.

The Centers for Disease Control and Prevention estimates that 1.5 million people in the United States develop bacteremia each year and approximately 250,000 deaths occur as a direct result of infection. It is estimated that one in three patients who die in the hospital have bacteremia. Bacteremia is the most expensive condition treated at U.S. hospitals, costing approximately $24 billion annually. S. aureus is the second most common pathogen associated with bacteremia, causing approximately 150,000 cases each year and approximately 30,000 deaths.

Prosthetic joint infection is a difficult to treat and costly condition. There are more than one million knee and hip joint replacements performed in the U.S. each year, which is projected to increase to over four million each year by 2030. There are approximately 50,000 prosthetic joint infections each year, with approximately 20% caused by S. aureus. Prosthetic joint infection is costly with the annual inpatient costs exceeding $1 billion and rapidly rising.

TABLE OF CONTENTS

The historical and projected number of infected total hip arthroplasty and total knee arthroplasty in the United States are as follows:

(3) Kurtz S et al. 2012. The Journal of Arthroplasty; 27(8): S1.

Prosthetic joint infection is difficult to treat because biofilm formation increases bacterial resistance to antibiotics. The current standard of care is a combination of surgery and antibiotics, with significant patient morbidity, high costs and up to 30% failure rate. The current standard of care includes a two-stage revision: surgery to remove the infected joint, four to six weeks of intravenous antibiotics, surgery to implant a new joint, followed by six weeks of antibiotics.

Risks Associated with Our Business and this Offering

Our business and our ability to implement our business strategy are subject to numerous risks, as more fully described in the section of this prospectus entitled “Risk Factors” and under similarly titled headings of the documents incorporated herein by reference. You should read these risks before you invest in our securities. We may be unable, for many reasons, including those that are beyond our control, to implement our business strategy. In particular, risks associated with our business include:

- There is substantial doubt about our ability to continue as a going concern, which may affect our ability to obtain future financing and may require us to curtail our operations. We will need to raise additional capital to support our operations.

- We have incurred losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future, and our future profitability is uncertain.

- Our product candidates must undergo rigorous clinical testing, such clinical testing may fail to demonstrate safety and efficacy and any of our product candidates could cause undesirable side effects, which would substantially delay or prevent regulatory approval or commercialization.

- Our single-patient expanded access strategy may not be successful, which in turn could adversely affect our business.

- We are dependent on patents and proprietary technology. If we fail to adequately protect this intellectual property or if we otherwise do not have exclusivity for the marketing of our products, our ability to commercialize products could suffer.

TABLE OF CONTENTS

- If our competitors are able to develop and market products that are more effective, safer or more affordable than ours, or obtain marketing approval before we do, our commercial opportunities may be limited.

- If you purchase our securities in this offering, you will incur immediate and substantial dilution.

- We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Corporate and Other Information

We were incorporated under the laws of the State of Washington in March 1989 as a wholly owned subsidiary of Immunex Corporation and began operations as an independent company in 1992 as Targeted Genetics Corporation. In January 2011, we completed the acquisition of Biocontrol Ltd, an antimicrobial biotechnology company based in the United Kingdom, with the goal of developing their phage therapy programs using funding from the sale of our legacy gene therapy assets.

In February 2011, we changed our name to "AmpliPhi Biosciences Corporation."

In November 2012, we completed the acquisition of Special Phage Holdings Pty Ltd, a company based in Australia, which we refer to as SPH, with the goal of combining SPH's research on addressing the rapidly escalating problem of antibiotic resistance through the development of a series of bacteriophage-based treatments into our own development programs.

In August 2015, we effected a 1-for-50 reverse split of our common stock, and in April 2017, we effected a 1-for-10 reverse split of our common stock. The share and per share information described in this prospectus that occurred prior to these reverse splits have been adjusted to give retrospective effect to the reverse splits.

Our principal executive offices are located at 3579 Valley Centre Drive, Suite 100, San Diego, California 92130. The telephone number at our principal executive office is (858) 829-0829. Our website address is www.ampliphibio.com. Our website and the information contained on, or that can be accessed through, our website will not be deemed to be incorporated by reference in, and are not considered part of, this prospectus. You should not rely on our website or any such information in making your decision whether to purchase our securities in this offering.

This prospectus contains references to our trademarks and to trademarks and trade names belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

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

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, or JOBS Act, enacted in April 2012. An "emerging growth company" may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations in the documents incorporated by reference into this prospectus;

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;

TABLE OF CONTENTS

- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and

- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may use these provisions until the last day of our fiscal year following the fifth anniversary of the first sale of our equity securities pursuant to an effective registration statement under the Securities Act of 1933, as amended, or the Securities Act, after we became a reporting company under the Securities Exchange Act of 1934, as amended, or the Exchange Act, pursuant to our registration statement on Form 10 (File No. 000-23930). However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenues exceed approximately $1.0 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

We are also a "smaller reporting company" as defined in Exchange Act and have elected to take advantage of certain of the scaled disclosures available to smaller reporting companies. We may be a smaller reporting company even after we are no longer an emerging growth company.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

TABLE OF CONTENTS

The Offering

Common stock offered by us in this offering

13,200,000 shares.

Pre-funded warrants offered by us in this offering

We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise 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 immediately following the consummation of this offering, the opportunity to purchase, if such purchasers so choose, pre-funded warrants, in lieu of shares of common stock that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant and the accompanying common warrant will equal the price at which the share of common stock and the accompanying common warrant are being sold to the public in this offering, minus $0.01, and the exercise price of each pre-funded warrant will be $0.01 per share. The pre-funded warrants will be exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Because we will issue a common warrant for each share of our common stock and for each pre-funded warrant to purchase one share of our common stock sold in this offering, the number of common warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold.

Common warrants offered by us in this offering

Common warrants to purchase an aggregate of 13,200,000 shares of our common stock. Each share of our common stock is being sold together with a common warrant to purchase one share of our common stock. Each common warrant will have an exercise price of $ per share, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the common warrants.

Option to purchase additional shares and/or common warrants

The underwriter has a 30-day option to purchase up to an additional 1,980,000 shares of our common stock and/or common warrants to purchase up to an additional 1,980,000 shares of our common stock from us at the public offering price less underwriting discounts and commissions.

TABLE OF CONTENTS

Common stock to be outstanding after this offering

29,668,308 shares (or 31,648,308 shares of common stock if the underwriter exercises in full its option to purchase additional shares of common stock) in each case assuming no sale of pre-funded warrants and assuming no exercise of any common warrants issued in this offering.

Use of proceeds

We intend to use the net proceeds from this offering for our first planned Phase 1/2 clinical trial of AB-SA01 for the treatment of S. aureus infections in patients with bacteremia, including associated manufacturing expenses, and for general corporate purposes. See “Use of Proceeds.”

Risk factors

You should read the “Risk Factors” section of this prospectus for a discussion of certain of the factors to consider carefully before deciding to purchase our securities in this offering.

National Securities Exchange Listing

Our common stock is listed on the NYSE American under the symbol “APHB.” We do not intend to list the pre-funded warrants or the common warrants on any securities exchange or nationally recognized trading system.

The number of shares of our common stock to be outstanding after this offering is based on 16,468,308 shares of common stock outstanding as of June 30, 2018 and assumes the sale and issuance by us of 13,200,000 shares of common stock and warrants to purchase 13,200,000 shares of common stock in this offering and excludes, as of June 30, 2018:

- 1,150,915 shares of common stock issuable upon the exercise of outstanding stock options, with exercise prices ranging from $0.73 to $135.00 and having a weighted-average exercise price of $3.09 per share;

- 445,376 shares of common stock reserved for future grant under our 2016 Equity Incentive Plan, or the 2016 plan;

- 47,172 shares of common stock reserved for future issuance under our 2016 Employee Stock Purchase Plan, or the ESPP;

- 8,296,995 shares of common stock issuable upon the exercise of outstanding warrants, with exercise prices ranging from $0.57 to $120.00 and having a weighted-average exercise price of $2.78 per share; and

- shares of common stock issuable upon the exercise of the common warrants issued in this offering.

Unless otherwise indicated, all information contained in this prospectus assumes no exercise by the underwriter of its option to purchase additional shares and/or common warrants and no sale of any pre-funded warrants in this offering.

TABLE OF CONTENTS

RISK FACTORS

Investing in our securities involves a high degree of risk. You should consider carefully the risks described below, together with all of the other information included or incorporated by reference in this prospectus, including the risks and uncertainties discussed under "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, which has been filed with the SEC and is incorporated by reference in this prospectus, as well as any updates thereto contained in subsequent filings with the SEC or any free writing prospectus, before deciding whether to purchase our securities in this offering. All of these risk factors are incorporated herein in their entirety. The risks described below and incorporated by reference are material risks currently known, expected or reasonably foreseeable by us. However, the risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, operating results, prospects or financial condition. If any of these risks actually materialize, our business, prospects, financial condition, and results of operations could be seriously harmed. This could cause the trading price of our common stock and the value of the warrants to decline, resulting in a loss of all or part of your investment.

Risks Related to this Offering

You will experience immediate and substantial dilution if you purchase securities in this offering.

As of June 30, 2018, our net tangible book value was approximately $3.4 million, or $0.21 per share. Since the effective price per share of our common stock being offered in this offering is substantially higher than the net tangible book value per share of our common stock, you will suffer substantial dilution with respect to the net tangible book value of the common stock you purchase in this offering. Based on the assumed combined public offering price of $0.91 per share of common stock and accompanying common warrant being sold in this offering (the last reported sale price of our common stock on the NYSE American on October 8, 2018), and our net tangible book value per share as of June 30, 2018, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of $0.43 per share with respect to the net tangible book value of the common stock. See the section entitled "Dilution" for a more detailed discussion of the dilution you will incur if you purchase securities in this offering. The discussion above assumes no sale of pre-funded warrants, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis.

There is no public market for the pre-funded warrants or common warrants being offered in this offering.

There is no established public trading market for the pre-funded warrants or common warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the pre-funded warrants or common warrants on any securities exchange or nationally recognized trading system, including the NYSE American. Without an active market, the liquidity of the pre-funded warrants and common warrants will be limited.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section entitled "Use of Proceeds," and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management may not apply the net proceeds from this offering in ways that ultimately increase the value of your investment. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

There may be future sales of our securities or other dilution of our equity, which may adversely affect the market price of our common stock.

We are generally not restricted from issuing additional common stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive, common stock. The market price

TABLE OF CONTENTS

of our common stock could decline as a result of sales of common stock or securities that are convertible into or exchangeable for, or that represent the right to receive, common stock after this offering or the perception that such sales could occur.

Holders of pre-funded warrants or common warrants purchased in this offering will have no rights as common stockholders until such holders exercise their pre-funded warrants or common warrants and acquire our common stock.

Until holders of pre-funded warrants or common warrants acquire shares of our common stock upon exercise of the pre-funded warrants or common warrants, holders of pre-funded warrants or common warrants will have no rights with respect to the shares of our common stock underlying such pre-funded warrants or common warrants. Upon exercise of the pre-funded warrants or common warrants, the holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Even if this offering is successful, we will need to raise additional capital in the future to continue operations, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We have had recurring losses from operations, negative operating cash flow and an accumulated deficit. We do not generate any cash from operations and must raise additional funds in order to continue operating our business. We expect to continue to fund our operations primarily through equity and debt financings in the future. If additional capital is not available to us when needed or on acceptable terms, we may not be able to continue to operate our business pursuant to our business plan or we may have to discontinue our operations entirely. As of June 30, 2018, we had cash and cash equivalents of $5.8 million. We estimate that we will receive net proceeds of approximately $10.7 million from the sale of the securities offered by us in this offering, based on the assumed combined public offering price of $0.91 per share and accompanying common warrant (the last reported sale price of our common stock on the NYSE American on October 8, 2018), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants issued in this offering. We currently anticipate that our existing resources, together with the expected net proceeds from this offering, will be sufficient to fund our planned operations until mid-2019. In the event of a decrease in the net proceeds to us from this offering as a result of a decrease in the assumed combined public offering price or the number of shares offered by us, we may need to raise additional capital sooner than we anticipate. In addition, we cannot provide assurances that our plans will not change or that changed circumstances will not result in the depletion of our capital resources more rapidly than we currently anticipate.

Developing drugs and conducting clinical trials is expensive. Our future funding requirements will depend on many factors, including:

- the costs and timing of our research and development activities;
- the progress and cost of our clinical trials and other research and development activities;
- manufacturing costs associated with our targeted phage therapies strategy and other research and development activities;
- the terms and timing of any collaborative, licensing, acquisition or other arrangements that we may establish;
- whether and when we receive future Australian tax rebates, if any;
- the costs and timing of seeking regulatory approvals;

- the costs of filing, prosecuting, defending and enforcing any patent applications, claims, patents and other intellectual property rights; and

- the costs of lawsuits involving us or our product candidates.

TABLE OF CONTENTS

We may seek funds through arrangements with collaborators or others that may require us to relinquish rights to the products candidates that we might otherwise seek to develop or commercialize independently. We cannot be certain that we will be able to enter into any such arrangements on reasonable terms, if at all.

We may seek to raise capital through a variety of sources, including:

- the public equity market;
- private equity financings;
- collaborative arrangements or strategic financings;
- licensing arrangements; and/or
- public or private debt.

Any additional fundraising efforts may divert our management from their day to day activities, which may adversely affect our ability to develop and commercialize our product candidates. Our ability to raise additional funds will depend, in part, on the success of our product development activities, including our targeted phage therapies strategy and any clinical trials we initiate, regulatory events, our ability to identify and enter into in-licensing or other strategic arrangements, and other events or conditions that may affect our value or prospects, as well as factors related to financial, economic and market conditions, many of which are beyond our control. There can be no assurances that sufficient funds will be available to us when required or on acceptable terms, if at all.

If we are unable to secure additional funds when needed or on acceptable terms, we may be required to defer, reduce or eliminate significant planned expenditures, restructure, curtail or eliminate some or all of our development programs or other operations, dispose of technology or assets, pursue an acquisition of our company by a third party at a price that may result in a loss on investment for our stockholders, enter into arrangements that may require us to relinquish rights to certain of our product candidates, technologies or potential markets, file for bankruptcy or cease operations altogether. Any of these events could have a material adverse effect on our business, financial condition and results of operations. Moreover, if we are unable to obtain additional funds on a timely basis, there will be substantial doubt about our ability to continue as a going concern and increased risk of insolvency and up to a total loss of investment by our stockholders.

The pre-funded warrants and common warrants are speculative in nature.

Neither the pre-funded warrants nor the common warrants offered hereby confer any rights of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price. Specifically, commencing on the date of issuance, holders of the pre-funded warrants may acquire the common stock issuable upon exercise of such warrants at an exercise price of $0.01 per share of common stock and holders of the common warrants may acquire the common stock issuable upon exercise of such warrants at an exercise price of $ per share. Moreover, following this offering, the market value of the pre-funded warrants and common warrants is uncertain and there can be no assurance that the market value of the pre-funded warrants or the common warrants will equal or exceed their public offering price. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the pre-funded warrants or common warrants, and consequently, whether it will ever be profitable for holders of the pre-funded warrants to exercise the pre-funded warrants or the holders of the common warrants to exercise the common warrants.

We are reviewing strategic alternatives and there can be no assurance that we will be successful in identifying or completing any strategic transaction, that any such strategic transaction will result in additional value for our stockholders or that the process will not have an adverse impact on our business.

In December 2017, we announced that we engaged Ladenburg Thalmann & Co. Inc. to conduct a review of strategic alternatives in an effort to maximize stockholder value. We have not set a timetable for completion of this exploratory process and cannot provide any assurances that the process will result in the

TABLE OF CONTENTS

consummation of a strategic transaction of any kind, or that we will not abandon the process. We do not intend to discuss or disclose further developments during this process unless and until our board of directors has approved a specific action or we otherwise determine that further disclosure is appropriate. The process of reviewing strategic alternatives may be time consuming and disruptive to our business operations and, if we are unable to effectively manage the process, our business, financial condition and results of operations could be adversely affected. We could incur substantial expenses associated with identifying, evaluating and negotiating potential strategic alternatives. There can be no assurance that any potential transaction or other strategic alternative, if consummated, will provide greater value to our stockholders than that reflected in the current price of our common stock. Until the review process is concluded, perceived uncertainties related to our future may result in the loss of potential business opportunities and volatility in the market price of our common stock and may make it more difficult for us to attract and retain qualified personnel and business partners.

TABLE OF CONTENTS

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements. The forward-looking statements are contained principally in the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business” in this prospectus or the documents incorporated herein by reference. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our estimates regarding anticipated operating losses, capital requirements and needs for additional funds;
- our ability to raise additional capital when needed and to continue as a going concern;
- our ability to manufacture, or otherwise secure the manufacture of, sufficient amounts of our product candidates for our preclinical studies and clinical trials;
- our clinical development and other research and development plans and expectations;
- our ability to select combinations of phages to formulate our product candidates;
- the safety and efficacy of our product candidates;
- the anticipated regulatory pathways for our product candidates;
- our ability to successfully complete preclinical and clinical development of, and obtain regulatory approval of our product candidates and commercialize any approved products on our expected timeframes or at all;
- the content and timing of submissions to and decisions made by the U.S. Food and Drug Administration and other regulatory agencies;
- our ability to leverage the experience of our management team;
- our ability to attract and keep management and other key personnel;
- the capacities and performance of our suppliers, manufacturers, contract research organizations and other third parties over whom we have limited control;
-

the actions of our competitors and success of competing drugs that are or may become available;

- our expectations with respect to future growth and investments in our infrastructure, and our ability to effectively manage any such growth;

- our expectations with respect to our single-patient expanded access strategy, including the ability to demonstrate on the timeframe we anticipate, or at all, proof-of-concept sufficient to support regulatory approval;

- the size and potential growth of the markets for any of our product candidates, and our ability to capture share in or impact the size of those markets;

- the benefits of our product candidates;

- market and industry trends;

- the outcome of any litigation in which we or any of our officers or directors may be involved;

- the effects of government regulation and regulatory developments, and our ability and the ability of the third parties with whom we engage to comply with applicable regulatory requirements;

- the accuracy of our estimates regarding future expenses, revenues, capital requirements and need for additional financing;

- our expectations regarding future planned expenditures;

TABLE OF CONTENTS

- our ability to achieve and maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act;

- our expectations regarding the period during which we qualify as an emerging growth company under the JOBS Act;

- our ability to obtain, maintain and successfully enforce adequate patent and other intellectual property protection of any of our products and product candidates;

- our expected use of the net proceeds from this offering; and

- our ability to operate our business without infringing the intellectual property rights of others.

In some cases, you can identify these statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “inten “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressio convey uncertainty of future events or outcomes. These forward-looking statements reflect our management’s beliefs and views with respect to future events and are based on estimates and assumptions as of the date of this prospectus and are subject to risks and uncertainties. We discuss many of these risks in greater detail in the documents incorporated by reference herein, usually under the heading “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

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

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise.

TABLE OF CONTENTS

USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately $10.7 million (or approximately $12.4 million if the underwriter's option to purchase additional securities is exercised in full) from the sale of the securities offered by us in this offering, based on the assumed combined public offering price of $0.91 per share of common stock and accompanying common warrant (the last reported sale price of our common stock on the NYSE American on October 8, 2018), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants issued in this offering. We cannot predict when or if these common warrants will be exercised. It is possible that these common warrants may expire and may never be exercised.

A $0.25 increase (decrease) in the assumed combined public offering price of $0.91 per share and accompanying common warrant would increase (decrease) the expected net proceeds to us from this offering by approximately $3.1 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Similarly, a one million share increase (decrease) in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us by approximately $0.8 million, assuming the assumed combined public offering price of $0.91 per share and accompanying common warrant remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We anticipate that we will use the net proceeds from this offering as follows:

- approximately $8 – 9 million to fund our first planned Phase 1/2 clinical trial of AB-SA01 for the treatment of S. aureus infections in patients with bacteremia, including associated manufacturing expenses; and
- the remainder for general corporate purposes, including working capital.

We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our planned operations until mid-2019. We currently estimate that our first planned Phase 1/2 clinical trial will be completed by the end of 2020, and accordingly we will require additional funding to be able to complete this clinical trial. It is difficult to predict the actual cost and timing required to complete this clinical trial due to, among other factors, our lack of experience with initiating and conducting clinical trials, the rate of subject enrollment in the clinical trial, clinical trial results, and the actual costs of manufacturing and supplying our product candidates for this clinical trial and our ongoing single-patient expanded access program. We intend to evaluate various funding sources in the future to fund our operations, including our first planned Phase 1/2 clinical trial of AB-SA01, which funding sources may include grant funding and the sale of our equity or convertible debt securities.

We may also use a portion of the net proceeds from this offering to in-license, acquire, or invest in complementary businesses, technologies, products or assets. However, we have no current plans, commitments or obligations to do so.

Our expected use of net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot currently allocate specific percentages of the net proceeds that we may use for the purposes specified above, and we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering, or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual use of the net proceeds will vary depending on numerous factors, including our ability to obtain additional financing, the progress, cost and results of our preclinical and clinical development programs and single-patient expanded access program, and whether we are able to enter into future licensing or collaboration arrangements. We may find it necessary or advisable to use the net proceeds for other purposes, and our management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds from this offering.

Pending the use of the net proceeds from this offering, we intend to invest the net proceeds in investment-grade, interest-bearing instruments.

TABLE OF CONTENTS

PRICE RANGE OF OUR COMMON STOCK

Our common stock is listed on the NYSE American under the symbol “APHB.” On October 8, 2018, the closing price for our common stock as reported on the NYSE American was $0.91 per share. The following table sets forth the ranges of high and low sales prices per share of our common stock as reported on the NYSE American for the period indicated. Such quotations represent inter-dealer prices without retail markup, markdown or commission and may not necessarily represent actual transactions.

	High	Low
Year Ended December 31, 2017		
First Quarter	$ 6.80	$ 4.20
Second Quarter	$ 5.00	$ 0.67
Third Quarter	$ 1.26	$ 0.70
Fourth Quarter	$ 1.65	$ 0.83
Year Ending December 31, 2018		
First Quarter	$ 2.05	$ 1.00
Second Quarter	$ 1.30	$ 1.05
Third Quarter	$ 1.19	$ 0.76
Fourth Quarter (through October 8, 2018)	$ 1.37	$ 0.90

As of June 29, 2018, there were 91 holders of record of our common stock, which excludes stockholders whose shares were held in nominee or street name by brokers. The actual number of common stockholders is greater than the number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

TABLE OF CONTENTS

DILUTION

Our historical net tangible book value as of June 30, 2018 was approximately $3.4 million, or $0.21 per share of common stock. Our historical net tangible book value is the amount of our total tangible assets less our liabilities. Historical net tangible book value per common share is our historical net tangible book value divided by the number of shares of common stock outstanding as of June 30, 2018.

After giving effect to the sale of 13,200,000 shares of our common stock and accompanying common warrants at the assumed combined public offering price of $0.91 per share and accompanying common warrant (the last reported sale price of our common stock on the NYSE American on October 8, 2018), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2018 would have been approximately $14.1 million, or $0.48 per share of common stock. This represents an immediate increase in as adjusted net tangible book value of $0.27 per share to our existing stockholders, and an immediate dilution of $0.43 per share to new investors purchasing securities in this offering at the assumed combined public offering price.

The following table illustrates this dilution on a per share basis:

Assumed combined public offering price per share and accompanying common warrant		$ 0.91
Historical net tangible book value per share as of June 30, 2018	$ 0.21	
Pro forma increase in net tangible book value per share attributable to investors in this offering	0.27	
As adjusted net tangible book value per share after this offering		0.48
Dilution per share to investors participating in this offering		$ 0.43

A $0.25 increase in the assumed combined public offering price of $0.91 per share and accompanying common warrant would increase our as adjusted net tangible book value after this offering by $3.1 million, or $0.10 per share, and the dilution per share to investors purchasing securities in this offering would be approximately $0.58 per share, assuming that the number of shares of common stock and accompanying common warrants offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, a $0.25 decrease in the assumed combined public offering price of $0.91 per share and accompanying common warrant would decrease our as adjusted net tangible book value after this offering by $3.1 million, or $0.11 per share, and the dilution per share to investors purchasing securities in this offering would be $0.29 per share, assuming that the number of shares of common stock and accompanying common warrants offered by us, as set forth on the cover page of this prospectus remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We may also increase or decrease the number of shares of common stock and accompanying common warrants we are offering from the assumed number of shares of common stock and accompanying common warrants set forth above. An increase of 1,000,000 shares of common stock and accompanying common warrants in the number of shares of common stock and accompanying common warrants offered by us from the assumed number of shares of common stock and accompanying common warrants set forth on the cover page of this prospectus would increase our as adjusted net tangible book value after this offering by $0.8 million, or $0.01 per share, and the dilution per share to investors purchasing securities in this offering would be approximately $0.42 per share, assuming that the assumed combined public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, a decrease of 1,000,000 shares of common stock and accompanying common warrants in the number of shares of common stock and accompanying common warrants offered by us from the assumed number of shares of common stock and accompanying common warrants set forth on the cover page of this prospectus would decrease our as adjusted net tangible book value after this offering by $0.8 million, or $0.02 per share, and the dilution per share to investors purchasing securities in this offering would be approximately $0.45, assuming that the assumed combined public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The

information discussed above is illustrative
19

TABLE OF CONTENTS

only and will adjust based on the actual public offering price, the actual number of shares and common warrants that we offer in this offering, and other terms of this offering determined at pricing. The discussion and table above assume (i) no sale of pre-funded warrants, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis, (ii) no exercise of the underwriter's option to purchase up to an additional 1,980,000 shares of common stock and/or common warrants to purchase up to an additional 1,980,000 shares of our common stock and (iii) no exercise of common warrants accompanying the shares of common stock sold in this offering.

If the underwriter exercises in full its option to purchase up to 1,980,000 additional shares of common stock and common warrants to purchase up to an additional 1,980,000 shares of common stock at the assumed combined public offering price of $0.91 per share and accompanying common warrant (the last reported sale price of our common stock on the NYSE American on October 8, 2018) less underwriting discounts and commissions, the as adjusted net tangible book value after this offering would be $15.8 million, or $0.50 per share, representing an increase in net tangible book value of $0.29 per share to existing stockholders and immediate dilution in net tangible book value of $0.41 per share to investors purchasing our securities in this offering at the assumed combined public offering price.

The foregoing discussion and table does not take into account further dilution to investors in this offering that could occur upon the exercise of outstanding options and warrants having a per share exercise price less than the public offering price per share in this offering.

The foregoing discussion and table are based on 16,468,308 shares of common stock outstanding as of June 30, 2018, and excludes as of that date:

- 1,150,915 shares of common stock issuable upon the exercise of outstanding stock options, with exercise prices ranging from $0.73 to $135.00 and having a weighted-average exercise price of $3.09 per share;

- 445,376 shares of common stock reserved for future grant under the 2016 plan;

- 47,172 shares of common stock reserved for future issuance under the ESPP;

- 8,296,995 shares of common stock issuable upon the exercise of outstanding warrants, with exercise prices ranging from $0.57 to $120.00 and having a weighted-average exercise price of $2.78 per share; and

- shares of common stock issuable upon the exercise of the common warrants issued in this offering.

To the extent that options or warrants outstanding as of June 30, 2018 have been or may be exercised or other shares issued, investors purchasing securities in this offering may experience further dilution. In addition, we may seek to raise additional capital in the future through the sale of equity or convertible debt securities. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

TABLE OF CONTENTS

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding beneficial ownership of our capital stock by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our current executive officers and directors as a group.

The percentage ownership information is based on 16,468,308 shares of common stock outstanding as of June 30, 2018.

The following table is based upon information supplied by officers, directors and principal stockholders and/or a review of Schedules 13D and 13G, if any, and other documents filed with the SEC. We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of our common stock issuable pursuant to the exercise of stock options or warrants that are either immediately exercisable or exercisable on or before August 29, 2018, which is 60 days after June 30, 2018. These shares are deemed to be outstanding and beneficially owned by the person holding those options or warrants for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

Except as otherwise noted below, the address for each person or entity listed in the table is c/o AmpliPhi Biosciences Corporation, 3579 Valley Centre Drive, Suite 100, San Diego, California 92130.

	Beneficial Ownership	
Beneficial Owner	Number of Shares	Percent of Total
5% or Greater Shareholders		
Sabby Management, LLC(1) 10 Mountainview Road, Suite 205 Upper Saddle River, NJ 07458	1,280,910	7.8%
Empery Asset Management, LP(2) 1 Rockefeller Plaza, Suite 1205 New York, New York 10020	1,149,449	6.9%
Directors and Named Executive Officers		
Paul C. Grint, M.D.(3)	1,719	*
Jeremy Curnock Cook(4)	470,887	2.9%
Louis Drapeau(5)	1,734	*
Michael S. Perry, Ph.D.(6)	467,654	2.1%
Vijay B. Samant(7)	1,120	*
Wendy S. Johnson(8)	5,590	*
Steve R. Martin(9)	22,959	*

Igor P. Bilinsky, Ph.D.(10)	52,343	*
M. Scott Salka(11)	71,421	*
All current executive officers and directors as a group (8 persons)(12)	557,536	3.4%

*
Represents beneficial ownership of less than 1%.

(1)
Consists of (a) 640,455 shares of common stock held by Sabby Healthcare Master Fund, Ltd., which we refer to as Sabby Healthcare and (b) 640,455 shares of common stock held by Sabby Volatility

TABLE OF CONTENTS

Warrant Master Fund, Ltd., which we refer to as Sabby Volatility. Sabby Management, LLC serves as the investment manager of Sabby Healthcare and Sabby Volatility, and has shared voting and investment power over the shares beneficially owned by Sabby Healthcare and Sabby Volatility listed in the foregoing clauses (a) and (b). Shares held by Sabby Healthcare and Sabby Volatility may be deemed to be indirectly beneficially owned (as defined under Rule 13d-3 promulgated under the Exchange Act) by Sabby Management, LLC. Sabby Management, LLC disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein. Hal Mintz is the Manager of Sabby Management, LLC. Shares held by this entity may be deemed to be indirectly beneficially owned (as defined under Rule 13d-3 promulgated under the Exchange Act) by Mr. Mintz. Mr. Mintz disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.

(2)

Consists of 1,000,000 shares of common stock and warrants exercisable for 149,449 shares of common stock.

(3)

Consists of 1,120 shares of common stock that Dr. Grint has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(4)

Consists of (a) 330 shares of common stock, (b) 411,105 shares referenced held by One Fund Management Limited as Trustee for Asia Pacific Healthcare Fund II (“One Funds”), an entity with which Mr. Cook is affiliated, and warrants exercisable for 55,365 shares of common stock, and (c) 4,087 shares of common stock that Mr. Cook has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(5)

Consists of 1,000 shares of common stock and 734 shares of common stock that Mr. Drapeau has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(6)

Consists of (a) 230 shares of common stock, (b) 411,105 shares referenced held by One Funds, an entity with which Dr. Perry is affiliated, and warrants exercisable for 55,365 shares of common stock, and (c) 954 shares of common stock that Dr. Perry has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(7)

Consists of 1,120 shares of common stock that Mr. Samant has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(8)

Consists of 100 shares of common stock and 5,490 shares of common stock that Ms. Johnson has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(9)

Consists of 376 shares of common stock and 22,583 shares of common stock that Mr. Martin has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(10)

Consists of 52,343 shares of common stock that Dr. Bilinsky has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options.

(11)

Consists of 71,421 shares of common stock that Mr. Salka has the right to acquire from us within 60 days of June 30, 2018, pursuant to the exercise of stock options. In May 2017, Mr. Salka resigned as our Chief Executive Officer and as a member of our board of directors.

(12)
Includes the shares described in footnotes (3) through (10) above (without duplication of the shares and warrants held by One Funds, an entity with which both Mr. Cook and Dr. Perry are affiliated).

TABLE OF CONTENTS

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock, certain provisions of our articles of incorporation and bylaws, and certain provisions of Washington law are summaries. The following description is not complete and is subject to and qualified in its entirety by our articles of incorporation and bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part, and by the relevant provisions of the Washington Business Corporation Act.

As of the date of this prospectus, our articles of incorporation authorize us to issue 67,000,000 shares of common stock, par value $0.01 per share, and 10,000,000 shares of preferred stock, par value $0.01 per share.

Common Stock

The holders of our common stock are entitled to the following rights:

Voting

Our common stock is entitled to one vote for each share held on all matters submitted to a vote of the stockholders, including the election of directors, and does not have cumulative voting rights. Accordingly, the holders of a majority of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, the holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding-up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that are outstanding or that we may designate and issue in the future.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control that may otherwise benefit holders of our common stock and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock.

TABLE OF CONTENTS

There currently are no provisions under our amended and restated articles of incorporation or under any other contractual obligations whereby we are authorized or required to issue or sell shares of preferred stock and we have no present plans to issue any shares of preferred stock.

Anti-Takeover Effects of Provisions of Our Articles of Incorporation, Our Bylaws and Washington Law

Provisions in our articles of incorporation, our bylaws and under Washington law may delay or prevent an acquisition of us or a change in our management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwi