

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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended **December 31, 2022**

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission File Number 001-37544

ARMATA PHARMACEUTICALS, INC.
(Exact name of registrant as specified in its charter)

Washington

91-1549568

(State or other jurisdiction of
incorporation and organization)

(I.R.S. Employer Identification No.)

**4503 Glencoe Avenue
Marina del Rey, CA 90292**

(Address of principal executive offices, including zip code)

(858) 829-0829

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01 per share	ARMP	NYSE American

Securities registered pursuant to Section 12(g) of the Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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 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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2022, the aggregate market value of voting stock held by non-affiliates of the Registrant, based on the closing price of the Common Stock on June 30, 2022 (the last business day of the Registrant's most recently completed second quarter) as quoted on the NYSE American, was approximately \$41.9 million.

As of March 13, 2023, 36,144,706 shares of the Registrant's Common Stock were outstanding.

Document Incorporated by Reference

None.

TABLE OF CONTENTS
ARMATA PHARMACEUTICALS, INC.

	<u>Page No.</u>
PART I	
Item 1. Business	5
Item 1A. Risk Factors	43
Item 1B. Unresolved Staff Comments	71
Item 2. Properties	72
Item 3. Legal Proceedings	72
Item 4. Mine Safety Disclosures	72
PART II	
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	72
Item 6. Reserved	74
Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	74
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	84
Item 8. Financial Statements and Supplementary Data	84
Item 9. Changes In and Disagreements With Accountants on Accounting and Financial Disclosure	107
Item 9A. Controls and Procedures	107
Item 9B. Other Information	109
Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections	109
PART III	
Item 10. Directors, Executive Officers and Corporate Governance	110
Item 11. Executive Compensation	120
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	127
Item 13. Certain Relationships and Related Transactions and Director Independence	130
Item 14. Principal Accountant Fees and Services	134
PART IV	
Item 15. Exhibits and Financial Statement Schedules	135
Item 16. Form 10-K Summary	139
Signatures	140

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Annual Report”) and certain information incorporated herein by reference contain forward-looking statements, which are provided under the “safe harbor” protection of the Private Securities Litigation Reform Act of 1995. These statements relate to future events, results or to our future financial performance and involve risks, uncertainties and other factors which may cause our actual results, performance or events to be materially different from any future results, performance or events expressed or implied by the forward-looking statements. Forward-looking statements in this Annual Report include, but are not limited to, statements regarding:

- 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 plans, including planned clinical trials;
- our research and development plans, including our clinical development plans;
- our ability to select combinations of phages to formulate our product candidates;
- our development of bacteriophage-based therapies;
- the potential use of bacteriophages to treat bacterial infections;
- the potential future of antibiotic resistance;
- our ability for bacteriophage therapies to disrupt and destroy biofilms and restore sensitivity to antibiotics;
- our planned development strategy, presenting data to regulatory agencies and defining planned clinical studies;
- the expected timing of additional clinical trials, including Phase 1b/Phase 2 or registrational clinical trials;
- our ability to manufacture and secure sufficient quantities of our product candidates for clinical trials;
- the drug product candidates to be supplied by us for clinical trials;
- the potential for bacteriophage technology being uniquely positioned to address the global threat of antibiotic resistance;
- the safety and efficacy of our product candidates;
- our anticipated regulatory pathways for our product candidates;
- the activities to be performed by specific parties in connection with clinical trials;
- 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;
- our pursuit of additional indications;

- the content and timing of submissions to and decisions made by the U.S. Food and Drug Administration (the “FDA”) and other regulatory agencies;
- our ability to leverage the experience of our management team and to attract and retain management and other key personnel;
- the capacities and performance of our suppliers, manufacturers, contract research organizations (“CROs”) and other third parties over whom we have limited control;
- our ability to staff and maintain our Marina del Rey production facility under fully compliant current Good Manufacturing Practices (“cGMP”);
- the actions of our competitors and success of competing drugs or other therapies 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;
- 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;
- potential market growth and market and industry trends;
- maintaining collaborations with third parties including our partnerships with the Cystic Fibrosis Foundation (“CFF”), and the U.S. Department of Defense (the “DoD”);
- potential future collaborations with third parties and the potential markets and market opportunities for product candidates;
- our ability to achieve our vision, including improvements through engineering and success of clinical trials;
- our ability to meet anticipated milestones in the development and testing of the relevant product;
- our ability to be a leader in the development of phage-based therapeutics;
- the expected use of proceeds from the \$16.3 million DoD grant;
- 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;
- our ability to achieve and maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley 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 ability to protect our intellectual property, including pending and issued patents;
- our ability to operate our business without infringing the intellectual property rights of others;
- our ability to advance our clinical development programs, which could be impacted by the ongoing COVID-19 pandemic;
- the expected impact of ongoing COVID-19 pandemic on our operations and any statements of assumptions underlying any of the items mentioned; and
- statements of belief and any statement of assumptions underlying any of the foregoing.

In some cases, you can identify these statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressions. 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 Annual Report and are subject to risks and uncertainties. We discuss many of these risks in greater detail in the section entitled “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 Annual Report, 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 any of the forward-looking statements included in this Annual Report. In addition, this Annual Report also contains estimates, projections and other information concerning our industry, our business, and the markets for our product candidates, as well as data regarding market research, estimates and forecasts prepared by our management. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. These statements are based upon information available to us as of the date of this Annual Report, 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.

This Annual Report includes trademarks and registered trademarks of Armata Pharmaceuticals, Inc. Products or service names of other companies mentioned in this Annual Report may be trademarks or registered trademarks of their respective owners.

As used in this Annual Report, unless the context requires otherwise, the “Company,” “we,” “us” and “our” refer to Armata Pharmaceuticals, Inc. and its wholly owned subsidiaries.

PART I

Item 1. BUSINESS

Overview

We are a clinical-stage biotechnology company focused on the development of pathogen-specific bacteriophage therapeutics for the treatment of antibiotic-resistant and difficult-to-treat bacterial infections using our proprietary bacteriophage-based technology. Bacteriophages or “phages” have a powerful and highly differentiated mechanism of action that enables binding to and killing specific bacteria, in contrast to traditional broad-spectrum antibiotics. We

believe that phages represent a promising means to treat bacterial infections, especially those that have developed resistance to current standard of care therapies, including the so-called multidrug-resistant or “superbug” strains of bacteria. We are a leading developer of phage therapeutics and are uniquely positioned to address the growing worldwide threat of antibiotic-resistant bacterial infections.

We are combining our proprietary approach and expertise in identifying, characterizing and developing both naturally-occurring and engineered (synthetic) bacteriophages with our proprietary phage-specific current good manufacturing practice regulations compliant (“cGMP”) manufacturing capabilities to advance a broad pipeline of high-quality bacteriophage product candidates.

We are developing and advancing our lead clinical phage candidate for *Pseudomonas aeruginosa* (“*P. aeruginosa*”). On October 14, 2020, we received the approval to proceed from the U.S. Food and Drug Administration (the “FDA”) for our Investigational New Drug (“IND”) application for AP-PA02. In the first quarter of 2023, Armata announced positive topline results from the completed “SWARM-*P.a.*” study – a Phase 1b/2a, multicenter, double-blind, randomized, placebo-controlled, single ascending dose (“SAD”) and multiple ascending dose (“MAD”) clinical trial to evaluate the safety and tolerability of inhaled AP-PA02 in subjects with cystic fibrosis (“CF”) and chronic pulmonary *P. aeruginosa* infection. Data indicate that AP-PA02 was well-tolerated with a treatment emergent adverse event profile similar to placebo. Pharmacokinetics (PK) findings confirm that AP-PA02 can be effectively delivered to the lungs through nebulization with minimal systemic exposure, with single ascending doses and multiple ascending doses resulting in a proportional increase in exposure as measured in induced sputum and exposure achievement relatively consistent across patient subjects. Additionally, bacterial levels of *P. aeruginosa* in the sputum measured at several timepoints suggest improvement in bacterial load reduction for subjects treated with AP-PA02 at the end of treatment as compared to placebo after ten days of dosing. This study is supported by the Cystic Fibrosis Foundation (“CFF”), which granted Armata a Therapeutics Development Award of up to \$5.0 million.

We are also developing and advancing a phage product candidate for *Staphylococcus aureus* (“*S. aureus*”) for the treatment of complicated *S. aureus* bacteremia, AP-SA02. On June 15, 2020, we entered into an agreement (the “MTEC Agreement”) with the Medical Technology Enterprise Consortium (“MTEC”), pursuant to which we expect to receive a \$15.0 million grant and entered into a three-year program administered by the U.S Department of Defense (the “DoD”) through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024. The grant is being used to partially fund a Phase 1/2, multi-center, randomized, double-blind, placebo- controlled dose escalation study that will assess the safety, tolerability, and efficacy of our phage-based candidate, AP-SA02, for the treatment of adults with *S. aureus* bacteremia. On November 17, 2021, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-SA02. We plan to continue to advance the “diSArm” study provided that the impacts of COVID-19 do not impede our ability to enroll subjects in this clinical trial.

On February 22, 2022, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-PA02, in a second indication, non-cystic fibrosis bronchiectasis (“NCFB”). The Company initiated a Phase 2 trial (“Tailwind”) in NCFB in 2022 and reported first patient dosing in the first quarter of 2023. The “Tailwind” study is a Phase 2, multicenter, double-blind, randomized, placebo-controlled study to evaluate the safety, phage kinetics, and efficacy of inhaled AP-PA02 phage therapeutic in subjects with NCFB and chronic pulmonary *Pseudomonas aeruginosa* infection.

On August 1, 2022, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-SA02, in a second indication, prosthetic joint infections (“PJI”). The Company plans to initiate a Phase 1b/2a trial in 2023, which will assess the safety and tolerability of intravenous and intra-articular AP-SA02 as an adjunct to standard of care antibiotics in adults undergoing debridement, antibiotics, and implant retention for the treatment of periprosthetic joint infections caused by *S. aureus*.

We are committed to conducting randomized controlled clinical trials required for FDA approval in order to move toward the commercialization of alternatives to traditional antibiotics and provide a potential method of treating patients suffering from drug-resistant and difficult-to-treat bacterial infections.

Recent Developments

2023 Credit Agreement

On January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva Strategic Opportunities LLC (“Innoviva SO”), a wholly owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, “Innoviva”), a principal stockholder of us. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by our domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of our assets and the subsidiary guarantors.

The Credit Agreement provides that if a Qualified Financing, as defined in the Credit Agreement, occurs, the outstanding principal amount of, and all accrued and unpaid interest on, the Loan shall be converted into shares of our common stock at a price per share equal to a 15.0% discount to the lowest price per share for our common stock paid by investors in a Qualified Financing (which price paid by investors in a Qualified Financing may not be less than a 15.0% discount to the closing price of our common stock immediately prior to the consummation of a Qualified Financing event). The Credit Agreement also requires us to file a registration statement for the resale of all securities issued to the lender in connection with any conversion under the Credit Agreement. After such registration statement has been declared effective by the U.S. Securities and Exchange Commission (the “SEC”), any outstanding Loan amount, including all accrued and unpaid interest thereon, may be converted at the lender’s option, into shares of our common stock at a price per share equal to the greater of book value or market value per share of our common stock on the date immediately preceding the effective date of the Credit Agreement, which is \$1.52 (as may be appropriately adjusted for any stock split, combination or similar act).

PJI IND Approval

On August 1, 2022, we announced that the FDA has cleared Armata's IND application for AP-SA02, in a second indication, PJI. The Company plans to initiate a Phase 1b/2 trial in PJI in 2023.

NCFB IND Approval

On February 22, 2022, we announced that the FDA has cleared Armata's IND application to initiate a clinical trial of AP-PA02 in a second indication, NCFB. We initiated a Phase 2 trial in NCFB in 2022 and announced first patient dosing in the first quarter of 2023.

February 2022 Private Placement

On February 9, 2022, we entered into a securities purchase agreement to sell our common stock and warrants to Innoviva SO, a wholly-owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, "Innoviva"), a principal stockholder of us.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases were completed in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

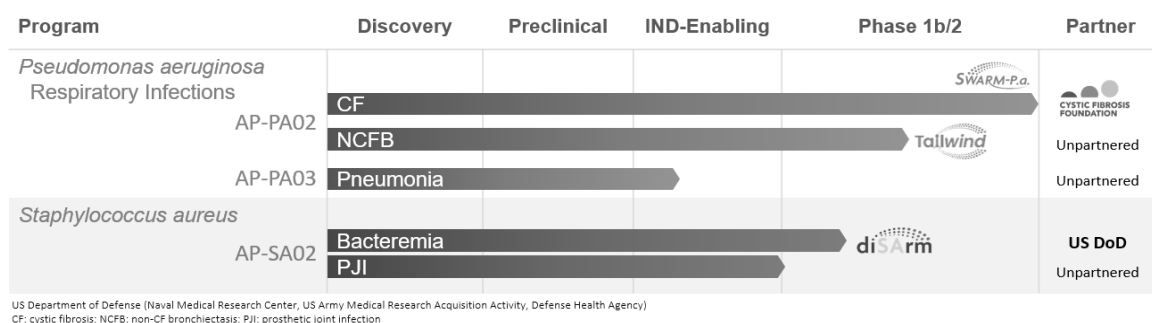
Executive Transition

On June 30, 2022, Steve R. Martin retired as our Chief Financial Officer and Senior Vice President (and Principal Financial and Accounting Officer). Mr. Martin agreed to continue his employment with us as an advisor to his successor in the Principal Financial and Accounting Officer role from July 1, 2022 through December 31, 2022.

On March 25, 2022, the Company's board of directors (the "Board of Directors") appointed Erin Butler to serve as (i) Vice President of Finance and Administration of the Company, effective April 1, 2022, and (ii) Principal Financial and Accounting Officer of the Company, effective July 1, 2022.

Pipeline

The following chart summarizes the status of our phage product candidate development programs and partners.



Strategy

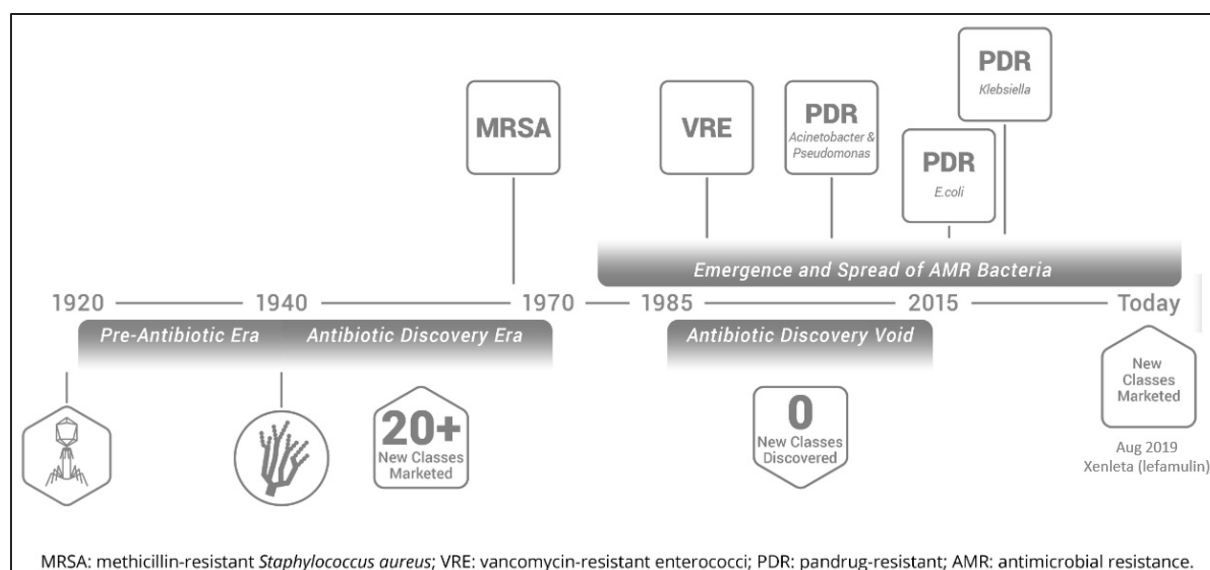
Our strategy is to demonstrate the safety, tolerability and efficacy of multiple phage products in randomized controlled clinical trials required for FDA approval and to support commercialization in multiple indications of high unmet medical need, including bacterial infections caused by multidrug-resistant and difficult-to-treat pathogens. Our fully integrated product development capabilities from bench to clinic enable the discovery of optimal product candidates, efficient process development and manufacturing, and rigorous clinical trials. Our microbiological surveillance and synthetic biology capabilities drive long-term product life cycle management. We intend to:

- Advance clinical trials of AP-PA02 in patients with CF and chronic pulmonary *P. aeruginosa* infections.
- Develop bacteriophage therapeutics, including AP-PA02 and AP-PA03, for the treatment of other antibiotic-resistant and difficult-to-treat *P. aeruginosa* infections such as NCFB and hospitalized pneumonia.
- Initiate and advance clinical trials of AP-SA02 in patients with *S. aureus* bacteremia.
- Develop AP-SA02 for the treatment of other antibiotic-resistant and difficult-to-treat *S. aureus* infections such as PJI.

The Need for New Anti-Infective Therapies

The introduction of penicillin in the early 1940s marked the start of the antibiotic discovery era, during which more than 20 new classes of antibiotic were marketed over a period of three decades. The first case of the "superbug", Methicillin-resistant *S. aureus* ("MRSA"), in the United States occurred in 1968. A void in the discovery of new classes of antibiotics lasting approximately 30 years drove the emergence and spread of antibiotic-resistant bacteria, including

vancomycin-resistant *enterococci* (“VRE”), and pandrug-resistant strains of *Acinetobacter baumannii*, *P. aeruginosa*, *Escherichia coli* and *Klebsiella pneumoniae*.



The dramatic and continuous emergence of antibiotic-resistant bacteria, and the lack of new antibiotics in the pipeline, has prompted calls to action from many of the world’s major health bodies such as the U.S. Centers for Disease Control and Prevention (the “CDC”), and the World Health Organization (the “WHO”), who warn of an “antibiotic cliff” and a “post-antibiotic era.” A growing list of infections – such as pneumonia, tuberculosis, bacteremia/septicemia, gonorrhea, and foodborne diseases – are becoming harder, and sometimes impossible, to treat as antibiotics become less effective. In 2009, the European Antimicrobial Resistance Surveillance System concluded that “the loss of effective antimicrobial therapy increasingly threatens the delivery of crucial health services in hospitals and in the community.” This conclusion was reinforced by The Antimicrobial Availability Task Force of the Infectious Diseases Society of America (the “IDSA”), and the European Centre for Disease Prevention and Control in conjunction with the European Medicines Agency (the “EMA”).

The IDSA and the WHO regard antimicrobial resistance as one of the greatest threats to human health worldwide. The Review on Antimicrobial Resistance, a global project commissioned by the British government and the Wellcome Trust, reports that at least 700,000 people die each year of drug resistance in illnesses that include bacterial infections. The report predicts that, by 2050, 10 million lives a year worldwide (more people than currently die from cancer) and a cumulative US\$100 trillion of economic output are at risk due to the rise of drug-resistant infections. The CDC estimates that at least 2 million people in the United States develop infections due to resistant bacteria resulting in more than 23,000 deaths each year. A 2018 study from the Washington University School of Medicine indicated that the number of deaths would be between 153,113 and 162,044, which suggests that the CDC estimates may be dramatic underestimations. It is estimated that 50% of hospital-acquired infections are resistant to first-line anti-infective therapies. The cumulative annual healthcare costs for treating drug-resistant bacterial infections in United States alone is calculated at US \$21 billion to US \$34 billion, with over 8 million additional hospital days. It is for these reasons that we believe there is a critical and pressing need to develop new and novel antibacterial therapies to combat the rise in antibiotic-resistance bacteria.

Anti-Infective Therapeutics Market

The market opportunity for antibiotics is large, with the market estimated to exceed \$58 billion in annual sales globally by 2027. Almost one in every five deaths worldwide occurs as a result of infection and, according to the WHO, many bacterial infections will become difficult or impossible to cure as the efficacy of current standard-of-care

antibiotics wanes. Despite the advances in antimicrobial and vaccine development, infectious diseases still remain the third-leading cause of death in the United States and the second-leading cause of death worldwide.

The number of new antibiotics approved by the FDA, and other global regulatory authorities has declined consistently over the last two decades. According to a March 2021 report from PEW Charitable Trusts, only 43 new antibiotics (all small molecules that act systemically) with the potential to treat serious or life-threatening bacterial infections are in global clinical development. This is compared with more than 1,100 new product candidates in the drug pipeline for cancer. Historically, the success rate from Phase 1 to marketing approval is only one in five for infectious disease products. We, therefore, believe there is a need for new approaches to treat serious and life-threatening bacterial infections.

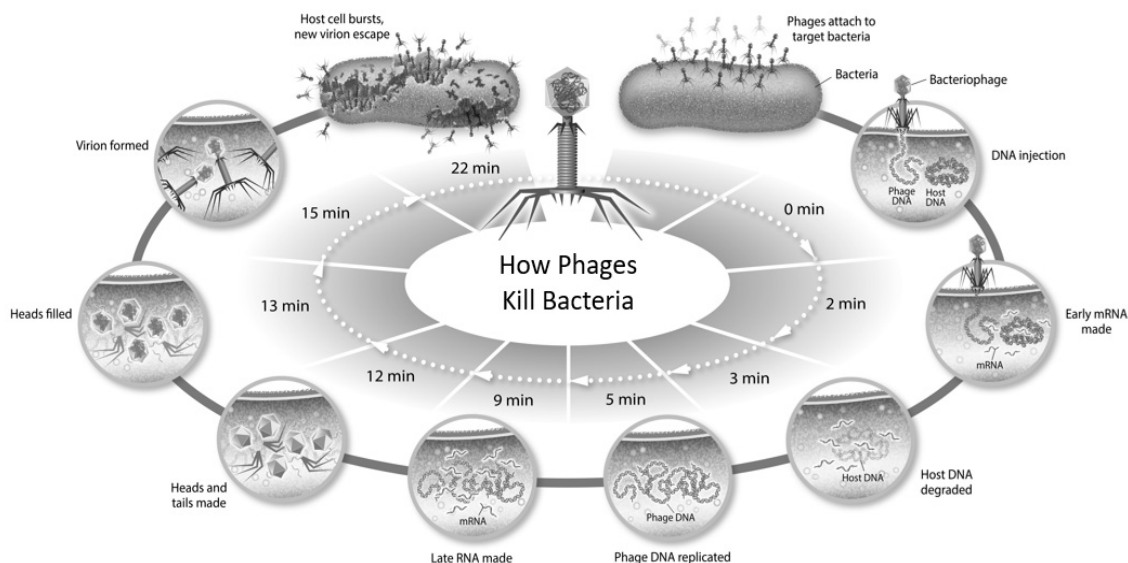
Hospital-acquired (nosocomial) infections are a major healthcare problem throughout the world, affecting developed countries as well as resource-poor countries. The WHO reports that hospital-acquired infections are among the major causes of death and increased morbidity among hospitalized patients and estimates that more than 1.4 million people per year worldwide suffer from infectious complications from a hospital stay. In 2016, the CDC reported that in the United States, approximately 4% of all patients admitted to a hospital will be affected by a hospital-acquired infection during their stay, typically requiring extended stays and additional care.

Compounding the above situations is the alarming and continuing rise in the prevalence of multidrug-resistant bacterial infections. This, coupled with the lack of new antibiotics in current discovery and development pipelines, has generated a significant clinical management problem worldwide, leading to increases in morbidity and mortality due to these antibiotic-resistant bacteria as well as increases in healthcare costs.

Bacteriophage therapy has the potential to be an alternative method of treating bacterial infection.

Bacteriophage Therapy

Bacteriophages, also known as phages, are ubiquitous viruses, found wherever bacteria exist. It is estimated there are more bacteriophages than every other organism on Earth combined. Phages are natural predators of bacteria, and the name “bacteriophage” translates as “eaters of bacteria”. Phages infect and rapidly kill the bacterial host by multiplying inside and then bursting through the cell membrane in order to release the next generation of phages into the surrounding environment, ready to infect and kill additional nearby target bacterial cells until the bacteria have been eliminated. When there are no target bacteria left for the phages to infect, the phages are removed through the body’s natural clearance processes.



Phages have the potential to provide both an alternative to, and a synergistic approach with, antibiotic therapy. Phages offer several differentiating attributes compared to classic antibiotics:

- Highly specific/selective bactericidal agents, sparing the microbiome. Since each strain of phage generally exploits only a particular bacterial host, phages may be a precision tool to reduce or eliminate specific strains of harmful bacteria without exposing patients to risks of eliminating beneficial bacteria through the use of antibiotics. Such risks could include serious opportunistic infections such as *Clostridium difficile* infection and vancomycin-resistant *enterococcal* (“VRE”) infection.
- No known toxicities associated with chemical structures. Antibiotic use is often associated with toxicities (e.g. kidneys, bone marrow, hearing). Phages are highly unlikely to carry structural features or be metabolized by the body to produce structural elements that confer chemical toxicities associated with small molecules.
- Distinct mechanism of bactericidal action. Since phages use different mechanisms of action, their activity is independent of antibiotic resistance and as such could provide much needed therapy for multi-drug resistant infections.
- Replication competent. It is possible that phage replication at the site of infection facilitates effective dosing.
- High potential for added functionality through genetic engineering. Phage genomes can be modified to confer benefits that address limitations, if any, that are observed during clinical development. Traits such as host range, burst size and biofilm disruption can be improved. These potential improvements help to assure phage therapeutics efficacy in difficult settings and over time as new isolates emerge.

Phages were discovered in 1915 at the Pasteur Institute and were shown to kill bacteria taken from patients suffering from dysentery. Furthermore, it was noted that phage numbers rose as patients recovered from infection, suggesting a direct association. Throughout the pre-antibiotic era, phages were widely used as an effective therapeutic agent to combat a variety of bacterial infections. However, phage use was displaced by the common use of broad-spectrum antibiotics in the early 1940s, with antibiotics being seen for many years as the superior treatment to combat bacterial disease, particularly in Western medicine. This attitude persisted until the development of the wide-ranging, and in some cases total, resistance to antibiotics seen within the last 10 years. We believe that the continuing emergence of antibiotic-resistant bacteria provides the opportunity to revitalize phage use.

There are hundreds of cases published in the scientific and medical literature describing the use of phage therapy in human medicine over more than 90 years, mostly in the former Soviet Union and Eastern Europe. Phage therapy is still commonly used today in Russia, Poland and Georgia, with numerous reports of success in treating infectious diseases caused by many pathogenic bacterial species. However, the safety and effectiveness of these therapies have not been conclusively established due to the lack of randomized controlled clinical studies.

Recently, Western medicine has seen a rise in the clinical evaluation of phages. In the United Kingdom, two early-stage clinical trials of *P. aeruginosa* phage cocktails showed no adverse effects in patients. One study (Phase 1/2a) demonstrated efficacy in a small trial of 12 patients with chronic multidrug-resistant *P. aeruginosa* otitis treated with a cocktail of six natural phages. Since 2016, there have been a number of “compassionate use” cases in which patients suffering from various serious or life-threatening infections have been treated with phage therapy under physician-sponsored Emergency Investigational New Drug (“EIND”) Applications with high rates of success and no adverse effects attributable to the therapy. Most notable was the well-documented case in 2016 of Tom Patterson, whose disseminated multidrug-resistant *Acinetobacter baumannii* infection was successfully treated with phage-based therapeutic cocktails administered intravenously and intraperitoneally. An 82-year-old male with an aortic graft (heart implant) infected with pandrug-resistant *P. aeruginosa* was successfully treated with a single application of phage, marking Yale University’s first case using phage therapy under Emergency IND. By early 2019, Yale University had treated more than half-a-dozen compassionate use cases, the majority individuals with CF with antibiotic-resistant lung infection. In 2018, a 15-year-old CF patient with a disseminated *Mycobacterium abscessus* lung infection was treated intravenously with a three-phage cocktail following lung transplantation. That patient’s case represents another milestone for phage therapy – the first person to be treated with genetically modified phages.

A consistent takeaway from these early phage therapy uses, and from the more recent clinical trials and compassionate use cases, is that phage therapy is generally well tolerated, with generally no reports of serious adverse events. Phages have previously received approvals for use in cleaning food facilities and as a food additive for human consumption by the FDA and the EMA, and as agricultural bacterial pest treatments by the United States Department of Agriculture (“USDA”). Phages have met the criteria to be considered as “generally recognized as safe”, or “GRAS”, in the food and food contact surface categories.

With the growing threat of antimicrobial resistance, we believe it is essential that phage safety and efficacy is demonstrated by conducting rigorous well-powered clinical trials required for FDA approval, in order to move toward commercialization of alternatives to traditional antibiotics and bring a potential solution to all patients suffering from drug-resistant bacterial infections.

Target Markets and Medical Need

Pulmonary Bacterial Infections

P. aeruginosa is consistently recognized by the CDC, and other public health agencies, as among the most dangerous and difficult-to-treat pathogens associated with significant impacts on health, quality of life, and economic burden. Regular standard-of-care antibiotics treatments often fail to completely eradicate the pathogen, and the problem is further complicated by rising rates of antibiotic resistance due to a growing number of multidrug-resistant isolates emerging, particularly with long term use. *P. aeruginosa* is particularly problematic for CF patients given that their already compromised immune system leads to chronic infections. In addition to CF lung infections, *P. aeruginosa* is responsible for other respiratory infections with high unmet medical need, including NCFB and hospitalized pneumonia.

P. aeruginosa Infection is a Major Cause of Morbidity and Mortality in Cystic Fibrosis

CF is a genetic disease caused by mutations in the CF transmembrane conductance regulator (“CFTR”) gene. CF affects over 30,000 people in the United States (70,000 people worldwide) with approximately 1,000 new diagnoses per year. Dysfunction of the CFTR gene leads to dysfunction in multiple organs, but particularly the lungs, where a failure of hydration of airway secretions results in thick mucus, chronic inflammation, airway remodeling, and recurrent infections. Lung function continues to decline over time, punctuated by pulmonary exacerbations with increased cough, shortness of breath, and infections that result in rapid declines in lung function. For these reasons, CF remains the most common fatal hereditary lung disease.

Outcomes for people with CF have improved significantly in recent years through early screening, the development and use of CFTR modulators, and other therapies. However, people with CF still suffer significant morbidity and mortality due to pulmonary infection with *P. aeruginosa*. Chronic *P. aeruginosa* infections occur in 55% of CF patients by age 25, and are strongly associated with worsening lung function, frequent pulmonary exacerbations, and increased mortality. In 2018, the median survival age was 47 years. Although many patients with chronic *P. aeruginosa* benefit from routine suppressive inhaled antibiotic therapy, large numbers of CF patients still experience clinical deterioration despite these treatments, hence the need for more effective therapies, ideally with a different mechanism of action compared to traditional antibiotics, for the treatment of chronic *P. aeruginosa* infection. GlobalData projects that total antibiotic sales in the CF market will exceed \$400 million in 2020.

Non-Cystic Fibrosis Bronchiectasis

NCFB is a chronic respiratory disease affecting more than 100,000 people in the United States and 200,000 people in Europe, characterized by recurrent respiratory infections that lead to a vicious cycle of impaired mucociliary clearance, chronic infection, bronchial inflammation, and progressive lung function loss. *P. aeruginosa* is the most prevalent pathogen responsible for these recurrent infections. It is found in approximately 30% of cases and is associated with enhanced disease progression, including poorer lung function and lower quality of life, more frequent exacerbations, 7-fold increase in hospitalizations, and 3-fold increase in death. NCFB patients frequently become chronically colonized with multidrug-resistant strains of *P. aeruginosa* because of the need for repeated courses of

antibiotic treatment. There are currently no approved inhaled antibiotics for the treatment of NCFB patients with chronic *P. aeruginosa* respiratory infections.

Hospitalized Pneumonia

Hospital-acquired pneumonia and ventilated-associated pneumonia is one of the most common causes of death among all hospital-acquired infections, with approximately 300,000 hospitalizations each year in the United States due to *Pseudomonas*. Infection with *Pseudomonas* results in mortality rates ranging as high as 35-50%, drives considerable healthcare costs (in excess of \$40,000 per patient), and accounts for around 50% of all intensive care unit antibiotics.

Staphylococcus aureus Infections

Bacteremia

Bacteremia is a bacterial infection of the bloodstream. A common diagnosis, the CDC estimates that up to 1.7 million people in the U.S. develop bacteremia each year. *S. aureus* is the most commonly identified pathogen in both hospital- and community-acquired bloodstream infections. Annually in the U.S. there are approximately 200,000 hospitalizations for *S. aureus* bacteremia (“SAB”). Despite conventional antibiotics, mortality in SAB results in the death of up to 40% of all cases and 57% of patients over the age of 85. Patients with comorbidities such as alcoholism, malignancy, diabetes, end-stage renal disease requiring hemodialysis, and immunosuppression are at even higher risk for death when SAB develops. Age-adjusted mortality assessments show that SAB mortality is higher than that of AIDS, tuberculosis, or viral hepatitis, and comparable to mortality rates for breast or prostate cancer. Outcomes are even poorer for SAB due to methicillin-resistant *S. aureus* (“MRSA”), classified as a serious threat to global health by the CDC and a high priority threat by the WHO, with higher rates of complications and increased mortality as compared to methicillin-susceptible *S. aureus* (“MSSA”). Average hospital costs to patients with nosocomial SAB ranges between \$40,000 (MSSA) and \$114,000 (MRSA). Treatment failures are common in SAB, with highest rates due to MRSA. These failures can be attributed in part to poor penetration of some tissues by antibiotics, slow onset of bactericidal effects, emerging resistance patterns, and biofilm formation. While biofilms can render traditional antibiotics ineffective, phages may have the ability to penetrate the biofilm allowing rapid and efficient infection of the host and amplification at the site of infection. Daptomycin (approved in 2005; based on clinical cure rates of less than 50%) and vancomycin are the only two antibiotics with label indications in the U.S. for the treatment of SAB, and the emergence of drug-resistant *S. aureus* isolates, including to these two standard of care drugs, represents a major threat in terms of increasing morbidity, mortality and health care utilization.

Prosthetic Joint Infection

The total number of prosthetic joint infection (“PJI”)-related revision surgeries is expected to more than double from 70,000 in 2020 to 144,000 in 2040 in the United States and European Union Five (France, Germany, Italy, Spain, United Kingdom), at an annual growth rate of 5.6% due to a growing elderly population. The United States is the largest market for PJI, accounting for 61% of PJI-related revision surgery in 2020 (estimated to be 71% by 2040) each estimated to cost \$150,000. *S. aureus* PJI infections are among the most commonly observed, accounting for up to 47% of all infections. PJI caused by biofilm-forming bacteria, such as *S. aureus*, is challenging to treat and requires both surgery and long-term antibiotic use. Lack of efficacy against biofilms is a common cause of re-infection or treatment failure in PJI. Moreover, growing antibiotic resistance complicates treatment strategies and antibiotic choice for the treatment of PJI. Phage therapy has been successful in patients who have failed conventional antibiotic treatment, including two 2020 case studies in which phage were administered by intravenous or intraarticular routes and shown to be generally well tolerated.

Platform Technologies

Synthetic Phage Platform

Phages, natural predators of bacteria, have been in an uninterrupted battle for millions of years – evolving to kill or evade. These powerful natural phages can be purposely engineered to be more efficient killers. The use of synthetic

biology tools enables us to precisely engineer natural phages in ways that further improve their pharmacological properties and antimicrobial activity. Attributes of engineered phages can include expanded host range, improved potency which is a fundamental drug property that can translate into improved clinical efficacy, and importantly, biofilm disruption, which is a critical aspect of serious infections that needs to be addressed.



Phage Discovery and Phenotyping:

Development of synthetic phage products that target a specific pathogen begins with the isolation of powerful natural phages from environmental and clinical samples. Our large library of multidrug-resistant pathogens and microbiome targets aids in the identification of the optimal phage candidates for downstream engineering.



Bioinformatics Powers Engineering:

We employ next-generation sequencing, proprietary sequencing databases and software, bioinformatics, and comparative genomics, for the analyses of our phages.



Engineering Phage to Confer Desirable Properties:

Depending on the target pathogen, identified natural phages are engineered to enable desirable phenotypes such as wide host range, payload expression, biofilm degradation, resistance prevention, and bioactive peptide display. Engineered phages are evaluated both in vitro and in vivo to determine pharmacological and toxicological parameters to confirm their potential in the clinic.



Formulation Development and Chemistry, Manufacturing, and Controls (“CMC”):

We have developed and acquired highly skilled process development and phage manufacturing expertise to manage our proprietary platforms with proven capabilities from the bench to clinic. Our research and development facilities are equipped with cGMP compliant manufacturing suites enabling the production, purification and testing and release of clinical trial material.

Preclinical and Clinical Development Programs

Overview

We are committed to developing novel phage therapies, with drug development expertise and product development capabilities that span bench to clinic, including in-house phage-specific cGMP manufacturing. Our phage discovery platform in which we screen panels of clinically-relevant isolates against our extensive phage library utilizing proprietary methods that identify phage combinations with superior attributes, together with our phage-specific cGMP compliant manufacturing facilities, uniquely enables us to efficiently identify optimal product candidates. Our microbiological surveillance and synthetic biology capabilities drive long-term product life cycle management.

Our therapeutic phage candidates aim to address areas of significant unmet medical need, by targeting key drug-resistant bacteria, including those on the WHO’s global priority pathogens list, and the priority pathogens list issued by the CDC. The long-term potential for phage therapy is broad reaching, including potential use as front-line therapy. However, first indications will be as adjunct therapy in indications with high unmet need, which demands careful patient population selection to assure that a treatment effect with the phage cocktail can be observed over and above the efficacy of standard-of-care antibiotics.

We are developing and advancing a broad pipeline of natural and synthetic phage candidates, including clinical candidates for *P. aeruginosa* and *S. aureus*, two bacterial pathogens known to have significant morbidity and mortality despite standard-of-care antibiotic usage. *P. aeruginosa* and *S. aureus* are causative agents for difficult-to-treat infections: *P. aeruginosa*, with its mucoid and multidrug-resistant strains, is a dominant culprit in chronic respiratory infections in CF and NCFB patients as well as acute pneumonias in hospitalized patients; *S. aureus*, with its heteroresistant and MRSA strains, has been implicated in systemic (e.g., bacteremia) as well as prosthetic-related

infections. By advancing randomized controlled clinical trials using *P. aeruginosa* and *S. aureus* natural phage cocktails, Armata will gain experience treating site-specific as well as systemic infections.

***Pseudomonas aeruginosa* Phage Product Candidate, AP-PA02**

Historical Background

AP-PA02 is being developed as a next-generation replacement for AP-PA01 (previously known as AB-PA01). A total of 10 patients with serious or life-threatening *P. aeruginosa* infections not responding to antibiotic therapy were treated with AP-PA01, along with antibiotics, under single-patient expanded access programs in the United States (authorized under Emergency INDs by the FDA) and in Australia (authorized under the Special Access Scheme by the Australian Therapeutic Goods Administration). The treated patients' infections included bacteremia, native and prosthetic valve endocarditis, recurrent pneumonia (CF, post-transplant), ventilated-associated pneumonia, prosthetic joint infection, ventricular assist device infection, and septicemia due to burns. Investigators concluded that intravenous and nebulized administration of AP-PA01 was well-tolerated with no treatment-related serious adverse events. One of these cases was published in August 2019, in the peer-reviewed journal *Infection*, after AP-PA01 was used to successfully treat a CF patient who had developed a multidrug-resistant *P. aeruginosa* infection. Another success with AP-PA01, used to treat a 77-year-old with ventilated-associated pneumonia and empyema, was published in November 2019, in the *American Journal of Respiratory and Critical Care Medicine*. We no longer offer AP-PA01 through any expanded access program.

In August 2018, we held a Type B pre-IND meeting with the U.S. FDA regarding a proposed Phase 1/2 clinical study of AP-PA01 for the treatment of *P. aeruginosa* respiratory infections (ventilated-associated pneumonia). Feedback from the FDA in September 2018 included: agreement on product specifications, manufacturing and analytical plan, and a stability program. Furthermore, the FDA noted that preclinical toxicology studies are not required for AP-PA01 to enter clinical development.

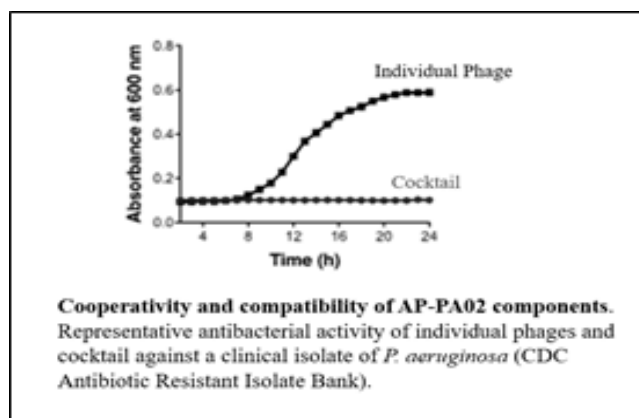
Human exposure through treatment of single patients with AP-PA01 under the expanded access program has been helpful in demonstrating the promise of phage therapy. Feedback from the pre-IND meeting has been insightful for the regulatory path required for phage therapeutics in general, and specifically for a phage product candidate intended for respiratory infection. We, therefore, have leveraged our experiences with AP-PA01 to derive a development plan for the next-generation product candidate, AP-PA02.

Preclinical Development of AP-PA02

AP-PA02 is one example of the novel candidates to emerge from our robust research and development capabilities, and significantly improves upon our original *P. aeruginosa* phage product candidate, AP-PA01. The phages that comprise AP-PA02 were selected with desired attributes for a product candidate targeting *P. aeruginosa* lung infections. Different methods were deployed, including microbiological, bioinformatics and comparative genomics, in order to identify optimal attributes for the product candidate. Susceptibility, killing kinetics, and biofilm eradication, was assessed using *P. aeruginosa* isolates from CF patients to determine antimicrobial activity and potency of AP-PA02. Viability in relevant biological fluids, and compatibility with current standard of care therapies for CF patients was verified to confirm suitability of AP-PA02 for clinical use in this patient population. Immune stimulation was assessed to assure the lack of inflammatory impact by AP-PA02. Animal studies were conducted to provide insight into safe and efficacious dose levels that would support the expectation of pharmacological activity (i.e. antimicrobial potential of phage) in the lung compartment following an inhaled route of administration. In parallel, we initiated manufacturing feasibility and process optimization efforts with the goal of achieving high-quality phage product free of endotoxin and host cell proteins whilst maintaining adequate phage titers.

AP-PA02 is comprised of a cocktail of natural *P. aeruginosa* phages originating from distinct families and subfamilies, targeting multiple receptor classes, functioning with compatibility (i.e., the phages don't interfere with one another) and cooperativity (i.e., the phages work together for a better outcome), and further characterized by being highly potent and having a broad host range and overlap. Prior to initiating the SWARM-*P.a.* trial (described below), our clinical isolate screening and phage collections yielded a three-phage AP-PA02 cocktail with compelling host-range

coverage. We subsequently modified AP-PA02 to include additional phage genera that increase potency and broaden coverage of strains of *P. aeruginosa* found in CF patients. The optimized five-phage AP-PA02 cocktail provides coverage against at least 90% of tested CF clinical isolates and has shown superior *in vitro* potency as well as improved efficacy in an animal model of infection. The improvements in AP-PA02 reflect our core strategy of utilizing clinical isolate surveillance data to drive enhancement of product composition.



Preclinical highlights of AP-PA02 include:

- Significantly reduced *P. aeruginosa* biofilm mass *in vitro*;
- Persistence of active phage particles in the lung;
- Limited systemic and off-target organ distribution;
- Significantly decreased mortality in a murine model of acute *P. aeruginosa* lung infection;
- Components are stable in blood and sputum;
- Not antagonistic with tobramycin nor aztreonam; and
- Components maintain activity in the presence of other CF therapies.

We have developed AP-PA02 as a sterile liquid formulation, suitable for delivery by inhalation. Clinical trial material of AP-PA02 is currently manufactured under cGMP at our production facility in Marina del Rey, California.

Clinical Development of AP-PA02 in Cystic Fibrosis

AP-PA02 product candidate is currently in clinical development. On October 14, 2020, Armata received approval for the study to proceed from the FDA for its IND to initiate the “SWARM-*P.a.*” study – a Phase 1b/2a, double-blind, randomized, placebo-controlled, single ascending dose (“SAD”) and multiple ascending dose (“MAD”) clinical trial to evaluate the safety, tolerability and phage recovery profile of AP-PA02 administered by inhalation in subjects with cystic fibrosis and chronic pulmonary *Pseudomonas aeruginosa* infection. Primary Endpoints (SAD and MAD) will include incidence and severity of treatment-emergent, adverse events. Secondary Endpoints (MAD) will include changes in *P. aeruginosa* colony-forming units (“CFU”). We will look at clinical parameters as a part of exploratory endpoints for the SAD and MAD cohorts. The enhanced five-phage AP-PA02 cocktail (described above) was advanced through manufacturing and regulatory review for introduction into the MAD component of the SWARM-*P.a.* study. The SWARM-*P.a.* study is supported by the CFF, which in March 2020 granted us a Therapeutics Development Award of up to \$5.0 million.

In the first quarter of 2023, Armata announced positive topline results from the completed “SWARM-*P.a.*” study – a Phase 1b/2a, multicenter, double-blind, randomized, placebo-controlled, single ascending dose (“SAD”) and multiple ascending dose (“MAD”) clinical trial to evaluate the safety and tolerability of inhaled AP-PA02 in subjects with cystic fibrosis (“CF”) and chronic pulmonary *P. aeruginosa* infection. Data indicate that AP-PA02 was well-tolerated with a treatment emergent adverse event profile similar to placebo. Pharmacokinetics (PK) findings confirm that AP-PA02 can be effectively delivered to the lungs through nebulization with minimal systemic exposure, with single ascending doses and multiple ascending doses resulting in a proportional increase in exposure as measured in induced sputum and exposure achievement relatively consistent across patient subjects. Additionally, bacterial levels of *P. aeruginosa* in the sputum measured at several timepoints suggest improvement in bacterial load reduction for subjects treated with AP- PA02 at the end of treatment as compared to placebo after ten days of dosing.

With positive outcomes from this first study, SWARM-*P.a.*, we plan to initiate follow-on studies that will investigate the efficacy of AP-PA02 in chronically-infected patients and potentially other CF patient populations. Our ultimate goal is to bring AP-PA02 to the CF community at large as a new FDA-approved novel therapy to treat airway *P. aeruginosa* infections and improve the long-term health of people with CF.

Exploring Additional Clinical Indications for Our P. aeruginosa Phage Product Candidates

Screening *P. aeruginosa* isolates from people diagnosed with NCFB revealed that the five-phage AP-PA02 cocktail offers broad coverage and robust potency in this indication as well. On February 22, 2022, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-PA02, in a second indication, NCFB. The Company initiated a Phase 2 trial (“Tailwind”) in NCFB in 2022 and reported first patient dosing in the first quarter of 2023. The “Tailwind” study is a Phase 2, multicenter, double-blind, randomized, placebo-controlled study to evaluate the safety, phage kinetics, and efficacy of inhaled AP-PA02 phage therapeutic in subjects with NCFB and chronic pulmonary *Pseudomonas aeruginosa* infection.

Conversely and representing the different physiology of acute pneumonia lung infections as compared to chronic CF and NCFB respiratory infections, a novel cocktail is in development for the clinical indication of acute hospitalized pneumonia. We have deployed our extensive clinical isolate collection and phage library to identify a candidate phage cocktail, AP-PA03.

Staphylococcus aureus Phage Product Candidate, AP-SA02

Historical Background

AP-SA02 is being developed as a more advanced version of AP-SA01 (previously known as AB-SA01).

The therapeutic potential of AP-SA01 has been demonstrated through:

- Efficacy in murine methicillin-resistant and methicillin-susceptible *S. aureus* pneumonia models, and sheep sinus biofilm model
- Demonstration of safety and tolerability in two completed investigator-initiated Phase 1 studies (topical administration: intact skin of healthy adults; intranasal administration: patients suffering from *S. aureus*-derived chronic rhinosinusitis).
- More recently, AP-SA01 was provided for use under single-patient expanded access programs in the United States (Emergency INDs, per the Food and Drug Administration) or Australia (Special Access Scheme, per the Australian Therapeutic Goods Administration). A total of 18 patients with serious or life-threatening *S. aureus* infections (including bacteremia, endocarditis, ventricular-assist device infection, prosthetic joint infection) not responding to standard-of-care antibiotic therapy were treated with AP-SA01. AP-SA01 was administered intravenously, with most patients treated for 14 days, every 12 hours as an adjunct to antibiotic therapy.

Investigators concluded that intravenous administration of AP-SA01 was well-tolerated with no treatment-related serious adverse events. We no longer offer AP-SA01 through any expanded access program.

Human exposure through treatment of single patients with AP-SA01 under the expanded access program has been helpful in demonstrating the promise of phage therapy and warrants further study to support safety and efficacy through randomized controlled trials required to support registration. Feedback from a Type B pre-IND meeting with the FDA in August 2018 has been insightful for the regulatory path required for phage therapeutics in general, and specifically for a phage product candidate intended for systemic delivery. We therefore have leveraged our experiences with AP-SA01 to derive a development plan for AP-SA02.

Product Optimization: Development of AP-SA02

AP-SA02 is a novel biologic product candidate comprised of a cocktail of natural lytic phages that target the problematic pathogen, *S. aureus*.

Preclinical highlights of AP-SA02 include:

- Potent antimicrobial activity against approximately 95% of *S. aureus* clinical isolates tested, including drug-resistant isolates (MRSA: methicillin-resistant *S. aureus* and VRSA: vancomycin-resistant *S. aureus*);
- Unique mechanism of action offers synergistic or additive benefit with standard of care antibiotics;
- Component phages are stable and retain infectivity after exposure to relevant biological fluids;
- Penetrates pre-existing *S. aureus* biofilms.

We have developed AP-SA02 as a sterile solution, suitable for delivery by intravenous administration. Clinical trial material of AP-SA02 is currently manufactured under cGMP at our production facility in Marina del Rey, California to support the required regulatory filing(s) for clinical entry in the United States and ex-U.S.

Clinical Development of AP-SA02 in Bacteremia

On November 17, 2021, Armata received approval for the study to proceed from the FDA for its IND to initiate the “diSArm” study – a Phase 1b/2a, randomized, double-blind, placebo-controlled, multiple ascending dose escalation study of the safety, tolerability, and efficacy of intravenous AP-SA02 as an adjunct to best available antibiotic therapy compared to best available antibiotic therapy alone for the treatment of adults with bacteremia due to *Staphylococcus aureus*. The objectives of this study are to: (i) demonstrate safety and tolerability of multiple different dose levels of AP-SA02; (ii) evaluate optimal dosing through safety, pharmacokinetics and microbial efficacy; and (iii) explore efficacy through evaluation of key meaningful endpoints. The study will be conducted at sites in the United States and also at sites abroad.

The Phase 1b/2a study will be partially funded by a \$15.0 million award from the DoD through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024.

Data from this Phase 1b/2a study will be invaluable for a follow-on trial that will be designed to demonstrate efficacy of AP-SA02 in treating *S. aureus* bacteremia. We anticipate findings from this Phase 1b/2a study will provide the basis for constructing a robust trial strategy for registration which can be the basis for an End-of-Phase-2 meeting with the FDA that enables us to obtain agreement on a path to approval.

Additional Clinical Indications for AP-SA02

Improved patient outcomes are needed for other *Staphylococcal* infections, in settings such as PJI, for which antimicrobial resistance is a growing concern. We believe AP-SA02 could also have a meaningful impact in this indication, particularly PJIs caused by methicillin-resistant *S. aureus* (“MRSA”). On August 1, 2022, we announced that we had received from the FDA the approval to proceed for our IND application for AP-SA02, in a second indication, PJI. We plan to initiate a Phase 1b/2a trial in 2023, which will assess the safety and tolerability of intravenous and intra-articular AP-SA02 as an adjunct to standard of care antibiotics in adults undergoing debridement, antibiotics, and implant retention for the treatment of periprosthetic joint infections caused by *S. aureus*.

Discovery Research

In addition to developing our more advanced pipeline programs described above, we continue phage discovery efforts by screening other interesting bacterial targets against our phage library in order to further expand our pipeline. *Klebsiella pneumoniae* phage, for example, is a potentially important addition to treatment options for serious lung infections.

Furthermore, our team of microbiologists and synthetic biologists hunt for natural phages and evaluate the suitability of these natural phages for engineering using our synthetic phage platform. These powerful natural phages can be purposely engineered to be more efficient killers. The use of synthetic biology tools enables us to precisely engineer natural phages in ways that further improve their pharmacological properties and antimicrobial activity. Attributes of engineered phages can include expanded host range, improved potency which is a fundamental drug property that can translate into improved clinical efficacy, and importantly, biofilm disruption, which is a critical aspect of serious infections that needs to be addressed.

Manufacturing

We produce clinical quantities of each of our bacteriophage product candidates at our cGMP-compliant manufacturing facility in Marina del Rey, California. This facility, which serves as our headquarters, has approximately 35,500 square feet of laboratory and office space, including 3,000 square feet of cGMP laboratory space, designed to produce clinical quantities of each of our product candidates and to perform in-house Quality Control testing. We operate in-house process development activities through to the production, purification, formulation, and release of our therapeutic phage cocktails for use in human clinical trials. Our facility is licensed by the California Department of Public Health (“CDPH”) for drug manufacturing and is subject to periodic, unannounced inspections for compliance with cGMP and other state and federal laws and regulations. The facility is subject to periodic inspections by the City of Los Angeles and Los Angeles County for fire hazard and waste management and is in compliance with all applicable regulations. Our facility is staffed with an independent Quality Unit and Manufacturing and Facilities personnel trained under cGMPs.

Our current formulations for our *P. aeruginosa* and *S. aureus* phage product candidates are intended for inhaled and intravenous delivery, both requiring our drug products to be sterile. Our Marina del Rey facility is capable of manufacturing sterile drug products, utilizing ISO-certified cleanrooms and ISO 5-certified biological safety cabinets. The facility also houses an ISO 5-certified closed system isolator. We may further optimize future formulations of our product candidates which may or may not require assurance of sterility.

For our manufacturing facility we have been able to access and hire highly skilled process development and phage manufacturing expertise and believe that we have control of our proprietary platform from phage identification through final product fill and finish and release. Manufacturing campaigns are managed by a specialist team of our internal staff, which is designed to promote compliance with the technical aspects and regulatory requirements of the manufacturing process. We have developed a cGMP-compliant manufacturing process that utilizes both industry standard and proprietary methods for the manufacture of our product candidates. Our process is designed to be scalable to meet our clinical study needs, and to fulfill the requirements of regulators for human studies.

Although our facility is capable of manufacturing our phage product candidates, we rely on, and may continue to rely on, third-party contract manufacturers for the manufacture of certain raw materials, components, or packaging of the product candidates that may be developed for clinical testing, as well as for commercialization.

Intellectual Property

General

Our goal is to protect the proprietary technology that we believe is important to our business, including to obtain, maintain and enforce patent protection for our product candidates, formulations, processes, methods and any other proprietary technologies, preserve our trade secrets and operate without infringing on the proprietary rights of other parties, both in the United States and in other countries. Our policy is to actively seek to obtain, where appropriate, the broadest intellectual property protection possible for our current product candidates and any future product candidates, proprietary information and proprietary technology through a combination of contractual arrangements and patents, both in the United States and abroad. However, patent protection may not afford us with complete protection against competitors who seek to circumvent our patents.

We also rely on trademarks, trade secrets, know-how, continuing technological innovation and in-licensing opportunities to develop and maintain our proprietary position. We also depend upon the skills, knowledge, experience and know-how of our management and research and development personnel, as well as that of our advisors, consultants and other contractors. To help protect our proprietary processes and know-how, which is not patentable, and for inventions for which patents may be difficult to enforce, we currently and will in the future rely on trade secret protection and contractual obligations with third parties to protect our interests and to develop and maintain our competitive position. To this end, we require all of our employees, consultants, advisors and other contractors to enter into agreements with contractual obligations that prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business.

Our success in preserving market exclusivity for our product candidates relies on patent protection, including extensions to this where appropriate, and on data exclusivity relating to an approved biologic. This may be extended by orphan drug and/or pediatric use protection where appropriate. Once any regulatory period of data exclusivity expires, depending on the status of our patent coverage, we may not be able to prevent others from marketing and selling biosimilar versions of our product candidates. We are also dependent upon the diligence of our appointed agents in national jurisdictions, acting for and on our behalf, which manage the prosecution of pending domestic and foreign patent applications and maintain granted domestic and foreign patents.

Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months or potentially even longer, and because publication of discoveries in the scientific or patent literature often lags behind actual discoveries and patent application filings, we cannot be certain of the priority of inventions covered by pending patent applications. Accordingly, we may not have been the first to invent the subject matter disclosed in some of our patent applications or the first to file patent applications covering such subject matter, and we may have to participate in interference proceedings or derivation proceedings declared by the United States Patent and Trademark Office (“U.S. PTO”) to determine priority of invention.

Bacteriophage Patent Portfolio

As of December 31, 2022, we owned or had exclusive license rights to a total of 144 patents and applications: 12 U.S. patents, 9 U.S. patent applications, 69 foreign patents, and 54 foreign patent applications, with nominal expiration on various dates between 2024 and 2041. Patent term adjustments or patent term extensions could result in later expiration dates. We believe these patents and applications cover our lead phage therapeutic programs and use thereof, synthetic phage and methods of manufacture thereof, beneficial effects of bacteriophage treatment, bacteriophage combinations, the sequential use of bacteriophages in combination with conventional antibiotics, genetic sequence variations, methods to reduce antibiotic resistance, methods to design therapeutic combination panels of bacteriophage, disinfection methods using bacteriophages, and bacteriophage mutants having increased bacterial host spectra.

Competition

The development and commercialization of new drugs is highly competitive. We face competition from many different sources, including commercial pharmaceutical and biotechnology enterprises, academic institutions, government agencies and private and public research institutions all seeking to develop novel treatment modalities for bacterial infections. Many of our competitors have significantly greater financial, product development, manufacturing and marketing resources than us. Large pharmaceutical companies have extensive experience in clinical development and obtaining regulatory approval for drug products. In addition, many universities and private and public research institutes are active in antibacterial research, some in direct competition with us. We also may compete with these organizations to recruit scientists and clinical development personnel.

Our ability to compete successfully will depend largely on our ability to leverage our collective experience in drug discovery, development and commercialization to:

- discover and develop medicines that are differentiated from other products in the market;
- obtain patent and/or proprietary protection for our products and technologies;
- obtain required regulatory approvals;
- obtain a commercial partner;
- commercialize our drugs, if approved; and
- attract and retain high-quality research, development and commercial personnel.

Key factors affecting the success of any approved product include its efficacy, safety profile, drug interactions, method of administration, pricing, reimbursement and level of promotional activity relative to those of competing drugs.

The majority of phage companies are focused on aspects outside of human health such as agriculture, food, environmental, veterinary, biocontrol, manufacturing, and diagnostics. There are a handful of small biotechnology companies developing bacteriophage products to treat human diseases. To our knowledge, several biotechnology companies in the United States and Europe, including Adaptive Phage Therapeutics, Pherecydes Pharma, BiomX Inc., Intralytix, Inc., Locus Biosciences, Inc., TechnoPhage, SA, Felix Biotechnology, as well as academic institutions, have discovery stage or clinical programs utilizing naturally occurring phages or synthetic biology approaches to genetically modify bacteriophages to remove or input genes to improve therapeutic properties such as increases to the bacterial host range to infect a larger number of bacterial strains and decrease the need for using multiple phages in a product.

Our bacteriophage programs may compete with or be synergistic with currently approved antibiotics, and experimental approaches such as novel antibiotics, antimicrobial peptides, antimicrobial vaccines, metals, antisense, monoclonal antibodies and possibly microbiome manipulation.

Sales and Marketing

We have full worldwide commercial rights to all of our phage-based product candidates to treat drug-resistant bacterial infections, including our product candidates: AP-PA02 and AP-PA03 for the treatment of *P. aeruginosa* infections, and AP-SA02 for the treatment of *S. aureus* infections. We believe we can maximize the value of our company by retaining substantial global commercialization rights to these product candidates and, where appropriate, entering into partnerships to develop and commercialize these product candidates.

We have not yet established a sales, marketing or product distribution infrastructure because our lead candidates are still in early clinical development. Subject to receiving marketing approvals, or earlier we intend to either partner the commercial rights to our products with existing companies that have the wherewithal and resources to commercialize

explore building the necessary marketing and sales infrastructure to market and sell our current product candidates. We also intend to explore the use of a variety of distribution agreements and commercial partnerships in those territories where we do not establish a sales force for any of our product candidates that obtain marketing approval.

Material Agreements

Strategic Alliances and Research Agreements

MTEC Grant

On June 15, 2020, we entered into a Research Project Award agreement (the “MTEC Agreement”) with MTEC, pursuant to which we will receive a \$15.0 million grant and entered into a three-year program administered by the DoD through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024. We plan to use the grant to partially fund a Phase 1b/2a, randomized, double-blind, placebo-controlled, dose-escalation clinical study of Armata's therapeutic phage-based candidate, AP-SA02, for the treatment of *S. aureus* bacteremia infections. The MTEC Agreement specifies that the grant will be paid to us through a cost reimbursable model, based on agreed-upon cost-share percentages, and the grant money received is not refundable to MTEC.

Upon license or commercialization of intellectual property developed with the funding from the MTEC Agreement, additional fees will be due to MTEC. We will elect whether to (a) pay a fixed royalty amount, which is subject to a cap based upon total funding received, or (b) pay an additional assessment fee, which would also be subject to a cap based upon a percentage of total funding received.

The MTEC Agreement will be effective through October 30, 2024. The MTEC Agreement may be terminated in whole or in part, 30 calendar days following the written notice from either party. In addition, MTEC has the right to terminate the MTEC Agreement upon material breach by Armata.

CFF Therapeutics Development Award

On March 13, 2020, we entered into an award agreement (the “Award Agreement”) with the CFF, pursuant to which we received a Therapeutics Development Award of up to \$5.0 million (the “Award”). The Award will be used to fund a portion of our Phase 1b/2a clinical trial of the *P. aeruginosa* phage candidate, AP-PA02, as a treatment for *P. aeruginosa* airway infections in people with CF.

The first payment under the Award Agreement, in the amount of \$1.0 million, became due upon signing the Award Agreement and was received in April 2020. The remainder of the award will be paid to us incrementally in installments upon the achievement of certain milestones related to the development program and progress of the Phase 1b/2a clinical trial of AP-PA02, as set forth in the Award Agreement.

If we cease to use commercially reasonable efforts directed to the development of AP-PA02, or any other Product (as defined in the Award Agreement), for a period of 360 days (an “Interruption”) and fail to resume the development of the Product after receiving from CFF notice of an Interruption, then we must either repay the amount of the Award actually received by the Company, plus interest, or grant to CFF (1) an exclusive (even as to Armata), worldwide, perpetual, sublicensable license under technology developed under the Award Agreement that covers the Product for use in treating infections in CF patients (the “CF Field”), and (2) a non-exclusive, worldwide, perpetual, sublicensable license under certain background intellectual property covering the Product, to the extent necessary to commercialize the Product in the CF Field.

Upon our commercialization of any Product, we will owe a fixed royalty amount to CFF, which is to be paid in installments determined, in part, based on commercial sales volumes of the Product. We will be obligated to make an additional fixed royalty payment upon achieving specified sales milestones. We may also be obligated to make a

payment to CFF if we transfer, sell or license the Product in the CF Field, or if we enter into a change of control transaction.

The term of the Award Agreement commenced on March 10, 2020 and expires on the earlier of the date on which we have paid CFF all of the fixed royalty payments set forth therein, the effective date of any license granted to CFF following an Interruption, or upon earlier termination of the Award Agreement. Either CFF or Armata may terminate the Award Agreement for cause, which includes our material failure to achieve certain development milestones. Our payment obligations survive the termination of the Award Agreement.

License Agreements

Amended and Restated Research Collaboration and Option to License Agreement with Merck

Pursuant to the terms of the Amended and Restated Research and Option to License Agreement (the “Research and Option Agreement”), entered into by and between us and Merck Sharp & Dohme Corp. (“Merck”), we are engaged in generating broad host range synthetic bacteriophage candidate(s) targeting an undisclosed infectious disease agent(s), pursuant to the criteria set forth in the research plan.

We granted to Merck an exclusive, worldwide license in our patent rights, and our interest in any joint patent rights, with the right to grant and authorize sublicenses, for any and all uses of any product candidates, or products, developed through the research plans set forth in the Research and Option Agreement in a specific field of use. Further, in exchange for milestone payments associated with product development and regulatory achievements and royalty payments based on net sales of products developed, we granted to Merck an exclusive, worldwide license, with the right to grant and authorize sublicenses, in our background intellectual property and know-how, solely to make, have made, use, import, offer to sell and sell (but not genetically modify) the product candidates, or products, developed through the research plans set forth in the Research and Option Agreement in the specific field of use.

On December 14, 2022, Armata received a notice of termination for the Research and Option Agreement, which will be effective in March 14, 2023, in accordance with Section 8.2.1 of the Research and Option Agreement which calls for termination effective 90 days after receipt of written notice to terminate.

License Agreement with United Kingdom Secretary of State for the Department of Health

In January 2011, upon completion of our acquisition of Biocontrol Ltd., we assumed a license agreement entered into in March 2007 between Biocontrol Ltd. and the Health Protection Agency, Centre for Emergency Preparedness and Response, to use certain intellectual property rights to develop treatments for bacterial biofilm infections. The agreement was subsequently assigned to the United Kingdom Secretary of State for the Department of Health (“DoH”).

Under the license agreement, we have obtained exclusive rights to a patent portfolio related to the use of bacteriophages combined with biofilm-disrupting agents in treating biofilm infections. In consideration for the exclusive license, we may be required to pay to the DoH certain milestone payments in the aggregate of up to £10,000 per product, as well as single digit percentage royalty on net sales of products incorporating licensed intellectual property.

The license agreement will remain in effect until the expiration of the last patent exclusively licensed under the license agreement. If we default on any milestone or royalty payments, or upon breach by us of certain other terms of the license agreement, the DoH may either terminate the license agreement immediately upon written notice or modify the license to be non-exclusive upon 30 days’ written notice.

Facilities

Our corporate headquarters are located in Marina del Rey, California, where we currently lease 35,500 square feet of laboratory and office space. The lease expires on December 31, 2031. The facility includes 19,500 square feet of BSL2 laboratory space dedicated to phage product development. The facility includes approximately 3,000 square feet of cGMP laboratory space, designed to produce clinical quantities of our phage product candidates for human trials and to perform in-house Quality Control (“QC”) testing. The manufacturing space consists of two ISO-certified cleanrooms capable of production, purification, drug product formulation and aseptic filling of drug product. The QC laboratory contains qualified analytical instruments to support the testing and release of clinical trial material. The facility is licensed by the California Department of Public Health (“CDPH”) for drug manufacturing and is subject to periodic, unannounced inspections for compliance with cGMP and other state and federal laws and regulations. Armata’s facility is subject to periodic inspections by the City of Los Angeles and Los Angeles County for fire hazard and waste management and is in compliance with all applicable regulations.

On October 28, 2021, we entered into a lease for office and research and development space under a non-cancellable lease in Los Angeles, CA (the “2021 Lease”). The 2021 Lease payment start date was May 1, 2022, and the total lease term is for 16 years and runs through 2038. Monthly rent for 2022 and 2023 will be fully or partially abated while we and the lessor complete planned tenant improvements to the facility, which is planned to be completed in the second half of 2023. Base monthly rent will be approximately \$0.25 million in 2024. We are entitled to receive an allowance for tenant improvements of up to \$7.3 million.

In addition, we lease a 5,000 square foot facility located in Sydney, Australia. The 4,000 square feet of laboratory space provides capabilities to support phage product development and manufacturing process development. The facility is also set up to provide microbiological support of clinical trials.

We occupy approximately 1,000 square feet of leased office space pursuant to a month-to-month sublease, located at 3579 Valley Centre Drive, Suite 100, San Diego, California 92130.

We believe that our facilities are adequate for our current and near-term needs.

Legal Proceedings

In addition, from time to time, we are a party to certain litigation that is either judged to be not material or that arises in the ordinary course of business. We intend to vigorously defend our interests in these matters. We expect that the resolution of these matters will not have a material adverse effect on our business, financial condition or results of operations. However, due to the uncertainties inherent in litigation, no assurance can be given as to the outcome of these proceedings.

As of the date of this Annual Report, we are not subject to any material legal proceedings.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of drug and biological products such as those we are developing. Generally, before a new drug or biologic can be marketed, considerable data demonstrating its quality, safety, efficacy, purity, and/or potency must be obtained, organized into a format specific for each regulatory authority, submitted for review and approved by the regulatory authority where the product is intended to be marketed.

United States Product Development Process

The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply

with the applicable FDA requirements at any time during the product development process or approval process, or after approval, may subject an applicant to administrative or judicial sanctions. FDA sanctions could include refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, total or partial suspension of production or distribution injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us. The process required by the FDA before a biological product may be marketed in the United States generally involves the following:

- Completion of preclinical laboratory tests, animal studies and formulation studies according to good laboratory practice requirements (“GLP”) or other applicable regulations;
- Submission to the FDA of an IND application, which must be granted before human clinical trials may begin in the United States or internationally if submitting results to the FDA;
- Performance of adequate and controlled human clinical trials according to the FDA’s regulations commonly referred to as good clinical practices (“GCPs”) and any additional requirements for the protection of human research subjects and their health information, to establish the safety and efficacy of the proposed biological product for its intended use or uses;
- Submission to the FDA of a Biologics License Application (“BLA”) for a new biological product;
- Satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities where the biological product is produced to assess compliance with the FDA’s cGMP regulations, to assure that the facilities, methods and controls are adequate to preserve the biological product’s identity, strength, quality and purity;
- Potential FDA inspection of the nonclinical study sites and clinical trial sites that generated the data in support of the BLA; and
- FDA’s approval of the BLA which must occur before a biological product can be marketed or sold in the United States.

The lengthy process of seeking required approvals and the continuing need for compliance with applicable statutes and regulations require the expenditure of substantial resources even when approvals are inherently uncertain.

The strategies, nature, and technologies of bacteriophage products are different from those of conventional antibiotic therapy products. From the regulatory requirements established to ensure the safety, efficacy and quality of bacteriophage preparations, there are several major points to consider during the development, manufacturing, characterization, preclinical study and clinical trial of bacteriophage products. The major issues include:

- Phage preparation design (single agent versus phage mixes and wild-type phage versus genetically engineered phage);
- Proof of concept in development of phage products;
- Selectivity of bacteriophage replication and targeting to specific species of bacteria;
- Relevant animal models in preclinical studies; and
- Clinical safety and efficacy.

Preclinical Studies and IND

Before testing any compounds with potential therapeutic value in humans, the biological product candidate enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product biology, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the biological product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements, including good laboratory practices described in 21 CFR Part 58 (GLP). The sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND application. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the IND on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a product candidate at any time before or during clinical trials due to safety concerns or non-compliance. Accordingly, we cannot be certain that submission of an IND application will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such clinical trial.

Clinical Trials

Clinical trials involve the administration of the product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by the sponsor. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject inclusion and exclusion criteria and the parameters to be used to monitor subject safety. Each protocol must be submitted to the FDA. Clinical trials must be conducted in accordance with GCP requirements. Further, each clinical trial must be reviewed and approved by an independent institutional review board (“IRB”) or ethics committee if conducted outside of the United States, at or servicing each institution at which the clinical trial will be conducted. An IRB or ethics committee is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB or ethics committee also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. We intend to use third-party CROs to administer and conduct our planned clinical trials and will rely upon such CROs, as well as medical institutions, clinical investigators and consultants, to conduct our trials in accordance with our clinical protocols. The failure by any of such third parties to meet expected timelines, adhere to our protocols or meet regulatory standards could adversely impact the subject product development program and we remain legally responsible for compliance with applicable laws and regulations governing the conduct of these clinical trials.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1: The product candidate is initially introduced into healthy human subjects and tested primarily for safety and dosage tolerance. Absorption, metabolism, distribution and excretion may also be tested.
- Phase 2: The product candidate is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product candidate for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.
- Phase 3: Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labeling. Generally, two adequate and well-controlled Phase 3 clinical trials are required by the FDA and other regulatory authorities for approval of a marketing application.

Post-approval studies, or Phase 4 clinical trials, may be requested by the FDA as a condition of approval and are conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication.

Progress reports detailing the results of the clinical trials must be submitted annually to the FDA and written safety reports must be submitted to the FDA and the investigators for serious and unexpected adverse events or any finding from tests in laboratory animals that suggest that there may be a significant risk for human subjects. The FDA or the sponsor or, if used, the sponsor's data safety monitoring board may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB or ethics committee can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's or ethics committee's requirements or if the pharmaceutical product has been associated with unexpected serious harm to patients. Suspension of a clinical trial due to safety risks attributed to the investigational product will result in termination of the trial and possibly others that are underway.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the physical characteristics of the product candidate as well as finalize a process for manufacturing the product candidate in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents or other impurities with the use of biological products, the Public Health Service Act emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency, and purity of the final biological product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

FDA Review and Approval Processes

In order to obtain approval to market a biological product in the United States, a BLA that provides data establishing to the FDA's satisfaction the safety and effectiveness of the investigational product candidate for the proposed indication must be submitted to the FDA. The application includes all data available from nonclinical studies and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's manufacture and composition, and proposed labeling, among other things. The testing and approval processes require substantial time and effort and there can be no assurance that the FDA will accept the BLA for filing and, even if filed, that any approval will be granted on a timely basis, if at all.

Under the Prescription Drug User Fee Act, as amended ("PDUFA"), each BLA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA has 60 days from its receipt of a BLA to determine whether the application will be accepted for filing based on the agency's threshold determination that the application is sufficiently complete to permit substantive review. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. After the BLA is accepted for filing, the FDA reviews it to determine, among other things, whether the proposed product is safe and effective for its intended use, has an acceptable purity profile, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, safety, strength, quality, potency, and purity. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has 10 months from the filing date in which to complete its initial review of an original BLA and respond to the applicant, and six months from the filing date of an original BLA designated for priority review. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs, and the review process is often extended by FDA requests for additional information or clarification.

Before approving a BLA, the FDA will conduct a preapproval inspection of the manufacturing facilities for the new product to determine whether they comply with cGMP requirements. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The FDA also may audit data from clinical

trials to ensure compliance with GCP requirements. Additionally, the FDA may refer applications for novel product candidates or those that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and, if so, under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. The FDA may ultimately decide that the BLA does not satisfy the criteria for approval. If a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biological product intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making the product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan drug designation for a biologic must be requested before submitting a BLA. After the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the rare disease or condition for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications to market the same drug for the same indication for seven years from the date of such approval. Additionally, the sponsor can benefit from certain financial incentives, including opportunities for grant funding towards clinical trial costs, research and development tax credits, and user fee waivers. If the same drug has already been approved, the proposed drug needs to demonstrate clinical superiority to obtain orphan exclusivity for the same indication, such as by means of greater effectiveness, greater safety or providing a major contribution to patient care, or in instances of drug supply issues.

Competitors, however, may receive approval of either a different product for the same indication or the same product for a different indication but that could be used off-label in the orphan indication. Orphan drug exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval before we do for the same product, as defined by the FDA, for the same indication we are seeking approval, or if our product is determined to be contained within the scope of the competitor's product for the same indication or disease. If one of our products designated as an orphan drug receives marketing approval for an indication broader than that which is designated, it may not be entitled to orphan drug exclusivity. Orphan drug status in the European Union has similar, but not identical, requirements and benefits.

Pediatric Information

Under the Pediatric Research Equity Act ("PREA"), a BLA or supplement to a BLA must contain data to assess the safety and efficacy of the biologic for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of pediatric data or full or partial waivers. A sponsor who is planning to submit a marketing application for a drug that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration must submit an initial Pediatric Study Plan ("PSP") within 60 days of an end-of-Phase 2 meeting or, if there is no such meeting, as early as practicable before the initiation of the Phase 3 or Phase 2/3 study. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA and the sponsor must reach an agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if

changes to the pediatric plan need to be considered based on data collected from preclinical studies, early phase clinical trials and/or other clinical development programs.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including Fast Track designation, Limited Population, accelerated approval and priority review, that are intended to expedite the process for the development and FDA review of drugs that are intended for the treatment of serious or life-threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs and biological products to patients earlier than under standard FDA review procedures.

To be eligible for a Fast Track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need, or if the drug or biological product qualifies as a qualified infectious disease product under the Generating Antibiotic Incentives Now Act (the “GAIN Act”). The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapies based on efficacy or safety factors. We intend to request Fast Track designation for our product candidates if applicable.

Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biological may request the FDA to designate the drug or biologic as a Fast Track product at any time during the clinical development of the product. Unique to a Fast Track product, the FDA may consider for review sections of the marketing application on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

Any product submitted to the FDA for marketing, including under a Fast Track program, may be eligible for other types of FDA programs intended to expedite development and review, such as priority review, accelerated approval, and, as of 2018, for antibacterial and antifungal therapies, approval under the Limited Population Pathway. Any product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or if there is a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug or biological product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Drug or biological products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means that they may be approved on the basis of adequate and well-controlled clinical trials establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity or mortality or other clinical benefits, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. The limited population pathway for antibacterial and antifungal drugs or biologics (“LPAD”) may enable the streamlined development of safe and effective medicines that overcome the unmet needs of a limited population of patients with serious bacterial infections.

As a condition of approval, the FDA may require a sponsor of a drug or biological product receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug or biological product may be subject to accelerated withdrawal procedures. In addition, the FDA currently requires as a condition for accelerated approval and approval under LPAD pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast Track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process. Approval under LPAD is for a limited population of patients; labeling statements for the limited use of the product are removed when supplemental data substantiates expansion of the patient population.

Eligibility for a drug or biologic product to be licensed under LPAD includes treatment of a serious or life-threatening infection in a limited population of patients with unmet medical need. FDA also considers the severity, rarity or prevalence of the infection and the lack of alternative treatment in the limited population the therapeutic is intended for. It is possible for qualifying therapies to complete a streamlined clinical program to demonstrate substantial evidence of effectiveness and safety in the limited population. Drugs or biological products approved under LPAD can also receive fast track and breakthrough designations as well as accelerated and priority review of the marketing application. LPAD-required limitations of labeling are removed when supplemental data demonstrating a favorable benefit-risk profile in a broader population corroborates label expansion. We intend to request approval under LPAD in the BLA for our product candidates if applicable.

A sponsor can also request designation of a product candidate as a “breakthrough therapy.” A breakthrough therapy is defined as a drug or biological product that is intended, alone or in combination with one or more other drugs or biological products, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the biological product or drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs or biological products designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy. We intend to request “breakthrough therapy” designation for our product candidates if applicable.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

FDA Post-Approval Requirements

Maintaining substantial compliance with applicable federal, state, local, and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Rigorous and extensive FDA regulation of new products continues after approval, particularly with respect to cGMP. We may rely on third parties for the production of commercial quantities of any products that we may commercialize. We and third-party manufacturers of our products are required to comply with applicable requirements in the cGMPs, including quality control and quality assurance and maintenance of records and documentation. We cannot be certain that we or our present or future suppliers will be able to comply with the cGMP and other FDA requirements. Other post-approval requirements applicable to biological products include reporting of cGMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record-keeping requirements, reporting of adverse effects, reporting updated safety and efficacy information, and complying with electronic record and signature requirements. After a BLA is approved, the product also may be subject to official lot release. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer’s tests performed on the lot. The FDA also may perform certain confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products.

Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements, by us or our suppliers, may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions and adverse publicity. FDA sanctions could include refusal to approve pending applications, withdrawal of an approval, clinical hold, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, mandated corrective advertising or communications with doctors, debarment, restitution, disgorgement of profits, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

Biological product manufacturers and other entities involved in the manufacture and distribution of approved products are required to register their facilities with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMPs and other laws. In addition,

changes to the manufacturing process or facility generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

Labeling, Marketing and Promotion

The FDA closely regulates the labeling, marketing and promotion of drugs and biological products, including direct-to-consumer advertising, promotional activities involving the internet, and industry-sponsored scientific and educational activities. While doctors are free to prescribe any product approved by the FDA for any use, a company can only make claims relating to safety and efficacy of a product that are consistent with FDA approval, and the company is allowed to actively market a product only for the particular use and treatment approved by the FDA. In addition, any claims we make for our products in advertising or promotion must be appropriately balanced with important safety information and otherwise be adequately substantiated. Failure to comply with these requirements can result in adverse publicity, warning letters, corrective advertising, injunctions and potential civil and criminal penalties.

Patent Term Restoration and Extension

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, including the United States (“U.S.”), the base term is 20 years from the filing date of the earliest-filed non-provisional patent application from which the patent claims priority. The term of a U.S. patent can be lengthened by patent term adjustment, which compensates the owner of the patent for administrative delays at the U.S. PTO. Depending upon the timing, duration and specifics of FDA approval of our drugs, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product’s approval date. The patent term restoration period is generally one half the time between the effective date of an IND, and the submission date of an NDA or BLA, plus the time between the submission date of an NDA or BLA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension, and the extension must be applied for prior to expiration of the patent. The U.S. PTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration.

Some foreign jurisdictions, including Europe and Japan, have analogous patent term extension provisions, which allow for extension of the term of a patent that covers a drug approved by the applicable foreign regulatory agency.

Biologics Price Competition and Innovation Act of 2009: Biosimilars and Interchangeable Biologic Products

The Biologics Price Competition and Innovation Act of 2009 amended the Public Health Service Act to create an abbreviated approval pathway for two types of “generic” biologics — biosimilars and interchangeable biologic products, and provides for a twelve-year data exclusivity period for the first approved biological product, or reference product, against which a biosimilar or interchangeable application is evaluated; however, if pediatric clinical trials are performed and accepted by the FDA, the twelve-year data exclusivity period will be extended for an additional six months. A biosimilar product is defined as one that is highly similar to a reference product notwithstanding minor differences in clinically inactive components and for which there are no clinically meaningful differences between the biological product and the reference product in terms of the safety, purity and potency of the product. An interchangeable product is a biosimilar product that may be substituted for the reference product without the intervention of the health care provider who prescribed the reference product.

The biosimilar applicant must demonstrate that the product is biosimilar based on data from (1) analytical studies showing that the biosimilar product is highly similar to the reference product; (2) animal studies (including toxicity); and (3) one or more clinical trials to demonstrate safety, purity and potency in one or more appropriate conditions of use for which the reference product is approved. In addition, the applicant must show that the biosimilar and reference products have the same mechanism of action for the conditions of use on the label, route of administration, dosage and strength, and the production facility must meet standards designed to assure product safety, purity and potency.

An application for a biosimilar product may not be submitted until four years after the date on which the reference product was first approved. The first approved interchangeable biologic product will be granted an exclusivity period of up to one year after it is first commercially marketed, but the exclusivity period may be shortened under certain circumstances.

Pediatric Exclusivity

Pediatric exclusivity is a type of marketing exclusivity available in the United States under the Best Pharmaceuticals for Children Act, which provides for an additional six months of marketing exclusivity and may be available if a sponsor conducts clinical trials in children in response to a written request from the FDA (the “Written Request”). If the Written Request does not include clinical trials in neonates, the FDA is required to include its rationale for not requesting those clinical trials. The FDA may request studies on approved or unapproved indications in separate Written Requests. The issuance of a Written Request does not require the sponsor to undertake the described clinical trials.

Diagnostics

We may employ companion diagnostics to help us to more accurately identify patients within a particular bacterial strain, both during our clinical trials and in connection with the commercialization of our product candidates that we are developing or may in the future develop. Companion diagnostics can identify patients who are most likely to benefit from a particular therapeutic product; identify patients likely to be at increased risk for serious side effects as a result of treatment with a particular therapeutic product; or monitor response to treatment with a particular therapeutic product for the purpose of adjusting treatment to achieve improved safety or effectiveness. Companion diagnostics are regulated as medical devices by the FDA and, as such, require either clearance or approval prior to commercialization. The level of risk combined with available controls to mitigate risk determines whether a companion diagnostic device requires Premarket Approval Application (“PMA”) approval or is cleared through the 510(k) premarket notification process. For a novel therapeutic product for which a companion diagnostic device is essential for the safe and effective use of the product, the companion diagnostic device should be developed and approved or 510(k)-cleared contemporaneously with the therapeutic. The use of the companion diagnostic device will be stipulated in the labeling of the therapeutic product.

Other U.S. Healthcare Laws and Compliance Requirements

In addition to FDA restrictions on the marketing of pharmaceutical products, we may be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. These laws may impact, among other things, our business or financial arrangements and relationships through which we market, sell and distribute the products, if any, for which we obtain approval. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs; a person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act or federal civil money penalties statute;
- federal civil and criminal false claims laws and civil monetary penalties laws, such as the federal False Claims Act, which impose criminal and civil penalties and authorize civil whistleblower or qui tam actions, against individuals or entities for, among other things: knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent; making, using or causing to be made or used, a false statement or record material to a false or fraudulent claim or obligation to pay or transmit money or

property to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government;

- the anti-inducement law, which prohibits, among other things, the offering or giving of remuneration, which includes, without limitation, any transfer of items or services for free or for less than fair market value (with limited exceptions), to a Medicare or Medicaid beneficiary that the person knows or should know is likely to influence the beneficiary's selection of a particular supplier of items or services reimbursable by a federal or state governmental program;
- The Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), which created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information;
- the federal transparency requirements under the Affordable Care Act (the "ACA"), including the provision commonly referred to as the Physician Payments Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to the U.S. Department of Health and Human Services information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members;
- federal government price reporting laws, which require us to calculate and report complex pricing metrics in an accurate and timely manner to government programs; and
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.

Additionally, we are subject to state and foreign equivalents of each of the healthcare laws described above, among others, some of which may be broader in scope and may apply regardless of the payor. Many U.S. states have adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare services reimbursed by any source, not just governmental payors, including private insurers. In addition, some states have passed laws that require pharmaceutical companies to comply with the April 2003 Office of Inspector General Compliance Program Guidance for Pharmaceutical Manufacturers and/or the Pharmaceutical Research and Manufacturers of America's Code on Interactions with Healthcare Professionals. Several states also impose other marketing restrictions or require pharmaceutical companies to make marketing or price disclosures to the state. There are ambiguities as to what is required to comply with these state requirements, and if we fail to comply with an applicable state law requirement, we could be subject to penalties. Finally, there are state and foreign laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws.

Violations of fraud and abuse laws may be punishable by criminal and/or civil sanctions, including penalties, fines, imprisonment and/or exclusion or suspension from federal and state healthcare programs such as Medicare and Medicaid and debarment from contracting with the U.S. government. In addition, private individuals have the ability to bring actions on behalf of the U.S. government under the federal False Claims Act as well as under the false claims laws of several states.

Law enforcement authorities are increasingly focused on enforcing fraud and abuse laws, and it is possible that some of our practices may be challenged under these laws. Efforts to ensure that our current and future business arrangements with third parties, and our business generally, will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our arrangements with physicians and other healthcare providers, some of whom receive stock options as compensation for services provided, may not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and 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 civil, criminal and administrative penalties, damages, disgorgement, monetary fines, imprisonment, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

If any of the physicians or other healthcare providers or entities with whom we expect to do business are found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs, which may also adversely affect our business.

Additional Regulation

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservancy and Recovery Act and the Toxic Substances Control Act, affect our business. These and other laws govern our use, handling and disposal of various biological, chemical and radioactive substances used in, and wastes generated by, our operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. We believe that we are in material compliance with applicable environmental laws and that continued compliance therewith will not have a material adverse effect on our business. We cannot predict, however, how changes in these laws may affect our future operations.

U.S. Foreign Corrupt Practices Act

The U.S. Foreign Corrupt Practices Act, to which we are subject, prohibits corporations and individuals from engaging in certain activities to obtain or retain business or to influence a person working in an official capacity. It is illegal to pay, offer to pay or authorize the payment of anything of value to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity.

U.S. Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medical products. For example, in March 2010, the ACA was enacted, which, among other things, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program; introduced a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for

drugs that are inhaled, infused, instilled, implanted or injected; extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care plans; imposed mandatory discounts for certain Medicare Part D beneficiaries as a condition for manufacturers' outpatient drugs coverage under Medicare Part D; subjected drug manufacturers to new annual fees based on pharmaceutical companies' share of sales to federal healthcare programs; imposed a new federal excise tax on the sale of certain medical devices; created a new Patient Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and established the Center for Medicare Innovation at the Centers for Medicare and Medicaid ("CMM") to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

Since its enactment, there have been a number of significant changes to the ACA. On October 13, 2017, President Trump signed an Executive Order terminating the cost-sharing subsidies that reimburse insurers under the Affordable Care Act. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. In January 2017, President Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the Affordable Care Act to waive, defer, grant exemptions from, or delay the implementation of any provision of the Affordable Care Act that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices.

The Tax Cuts and Jobs Act of 2017 ("TCJA"), includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer sponsored insurance plan, the annual fee imposed on certain health insurance providers based on market share, and the medical device exercise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, among other things, amends the ACA, effective January 1, 2019, to reduce the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." Congress will likely consider other legislation to replace or modify elements of the Affordable Care Act. We continue to evaluate the effect that the Affordable Care Act and its possible repeal, replacement or further modification could have on our business. It is uncertain the extent to which any such changes may impact our business or financial condition.

In addition, the Budget Control Act of 2011 and the Bipartisan Budget Act of 2015 led to aggregate reductions of Medicare payments to providers of up to 2% per fiscal year that will remain in effect through 2027 unless additional Congressional action is taken. Further, on January 2, 2013, the American Taxpayer Relief Act was signed into law, which, among other things, reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. More recently, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which have resulted in several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. Individual states in the United States have also become increasingly active in passing legislation and implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We expect that additional foreign, federal and state healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in limited coverage and reimbursement and reduced demand for our products, once approved, or additional pricing pressures.

Government Regulation Outside of the United States

In addition to regulations in the United States, we will be subject to a variety of regulations in other jurisdictions governing, among other things, clinical trials of drug products as well as the approval, manufacture and distribution of our product candidates. Because biologically sourced raw materials are subject to unique contamination risks, their use may be restricted in some countries. Whether or not we obtain FDA approval for a product candidate, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical trials or marketing of the product in those countries. If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Clinical Trials

Certain countries outside of the United States have a regulatory process similar to the U.S. process that requires the submission of a clinical trial application (“CTA”) much like the IND prior to the commencement of human clinical trials. In the European Union, for example, CTA must be submitted for each clinical trial to the national health authority and an independent ethics committee in each country in which the trial is to be conducted, much like the FDA and an IRB, respectively. Clinical trial application must be accompanied by an investigational medicinal product dossier with supporting information prescribed by the Clinical Trials Directive (and corresponding national laws of the member states) and further detailed in applicable guidance documents. Once the CTA is approved in accordance with a country’s requirements, the clinical trial may proceed. A similar process to the one described for the European Union is required in Israel for initiation of clinical trials. The requirements and process governing the conduct of clinical trials vary from country to country. In all cases, the clinical trials must be conducted in accordance with GCP and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

Approval Process

In order to market our products, we must obtain a marketing approval for each product and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing in comparison to the testing carried out for the U.S. approval. The time required to obtain approval in foreign countries may differ substantially from that required to obtain FDA approval. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. The regulatory approval process outside the United States generally is subject to all of the same risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country.

To obtain marketing approval of a medicinal product under the European Union regulatory system, an applicant must submit a marketing authorization application (“MAA”), under either a centralized or a decentralized procedure. The decentralized procedure is based on a collaboration among the member states selected by the applicant. In essence, the applicant chooses a ‘lead’ member state that will carry out the scientific assessment of the MAA and review the product information. The other member states must recognize the outcome of such assessment and review except in case of a “serious potential risk to public health.” The decentralized procedure results in the grant of a national marketing authorization in each selected country. That procedure is available for all medicinal products unless they fall into the mandatory scope of the centralized procedure. In practice, it is used for over-the-counter, not highly innovative products, generic products and, increasingly, for biosimilars.

The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid for all European Union member states. The centralized procedure is compulsory for certain medicinal products, including for medicinal products produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy medicinal products (“ATMPs”) and products with a new active substance and indicated for the treatment of certain diseases. For products with a new active substance and indicated for the treatment of other diseases, products that are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure is optional.

Under the centralized procedure, the Committee for Medicinal Products for Human Use (“CHMP”), the main scientific committee established at the EMA, is responsible for conducting the scientific assessment of the future medicinal product. The CHMP is also responsible for several post-authorization and maintenance activities, such as the assessment of modifications or extensions to an existing marketing authorization. The maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops. The European Commission grants or refuses the marketing authorization, following a procedure that involves representatives of the member states. The European Commission’s decision is in accordance with the CHMP scientific assessment except in very rare cases.

Pursuant to Regulation (EC) 1394/2007, specific rules apply to ATMPs, a category that is comprised of gene therapy medical products, somatic cell therapy medicinal products, and tissue-engineered medicinal products. Those rules have triggered the adoption of guidelines on manufacturing, clinical trials and pharmacovigilance that adapt the general regulatory requirements to the specific characteristics of ATMPs. Regulation (EC) 1394/2007 introduced a “hospital exemption,” which authorizes hospitals to develop ATMP for their internal use without having obtained a marketing authorization and to complying with European Union pharmaceutical law. The hospital exemption, which is in essence a compounded ATMP, has been transposed in all Member States, sometimes in such a way that the ATMPs under the hospital exemption are competitive alternatives to ATMPs with marketing authorization. The broad use of the hospital exemption by national hospitals led the European Commission to discuss with the Member States a more reasonable application of the hospital exemption that would not undermine the common legal regime for ATMP.

Marketing authorization is valid for five years in principle and the marketing authorization may be renewed after five years on the basis of a re-evaluation of the risk-benefit balance by the EMA or the competent authority of the authorizing member state. To this end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period, unless the European Commission or the national competent authority decides, on justified grounds relating to pharmacovigilance, to proceed with one additional renewal. Any authorization which is not followed by the actual placing of the medicinal product on the European Union market (in case of centralized procedure) or on the market of the authorizing member state within three years after authorization ceases to be valid (the so-called sunset clause).

Orphan Designation

Countries other than the United States have adopted a specific legal regime to support the development and marketing of drugs and biologics for rare diseases.

For example, in the European Union, Regulation 141/2000 organizes the grant of orphan drug designations to promote the development of products that are intended for the diagnosis, prevention or treatment of life threatening or chronically debilitating conditions affecting not more than five in 10,000 persons in the European Economic Area (the European Union, plus Iceland, Liechtenstein and Norway) (or where it is unlikely that the development of the medicine would generate sufficient return to justify the investment) and for which no satisfactory method of diagnosis, prevention or treatment has been authorized or, if a method exists, the product would be of significant benefit to those affected. The EMA’s Committee for Orphan Medicinal Products (“COMP”) examines if the orphan criteria are met and gives opinions thereon, and the orphan status is granted by the European Commission. The meeting of the criteria for orphan designation is examined again by the COMP at the time of approval of the medicinal product, which typically occurs several years after the grant of the orphan designation. If the criteria for orphan designation are no longer met at that time, the European Commission withdraws the orphan status.

In the European Union, orphan drug designation entitles the sponsor to financial incentives such as reduction of fees or fee waivers and to ten years of market exclusivity granted following medicinal product approval. Market exclusivity precludes the EMA or a national regulatory authority from validating another MAA, and the European Commission or a national regulatory authority from granting another marketing authorization, for the same or similar medicinal product and the same therapeutic indication, for that time period. This 10-year period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. The orphan exclusivity may be lost vis-à-vis another medicinal product in

cases the manufacturer is unable to assure sufficient quantity of the medicinal product to meet patient needs or if that other product is proved to be clinically superior to the approved orphan product. A drug is clinically superior if it is safer, more effective or makes a major contribution to patient care. Orphan drug designation must be requested before submitting a MAA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process, and it does not afford any regulatory exclusivity until a marketing authorization is granted.

Expedited Development and Approval

Mechanisms are in place in many jurisdictions that allow an earlier approval of the drug so that it reaches patients with unmet medical needs earlier. The European Union, for example, has instituted several expedited approval mechanisms including two mechanisms that are specific to the centralized procedure:

- the accelerated approval: the EMA may reduce the maximum timeframe for the evaluation of an MAA from 210 days to 150 days when the future medicinal product is of major interest from the point of view of public health, in particular from the viewpoint of therapeutic innovation; and
- the conditional marketing authorization: as part of its marketing authorization process, the European Commission may grant marketing authorizations on the basis of less complete data than is normally required.

A conditional marketing authorization may be granted when the CHMP finds that, although comprehensive clinical data referring to the safety and efficacy of the medicinal product have not been supplied, all the following requirements are met:

- the risk/benefit balance of the medicinal product is positive;
- it is likely that the applicant will be in a position to provide the comprehensive clinical data;
- unmet medical needs will be addressed; and
- the benefit to public health of the immediate availability on the market of the medicinal product concerned outweighs the risk inherent in the fact that additional data is still required.

The granting of a conditional marketing authorization is typically restricted to situations in which only the clinical part of the application is not yet fully complete. Incomplete preclinical or quality data may however be accepted if duly justified and only in the case of a product intended to be used in emergency situations in response to public health threats.

Conditional marketing authorizations are valid for one year, on a renewable basis. The conditions to which approval is subject will typically require the holder to complete ongoing trials or to conduct new trials with a view to confirming that the risk/benefit balance is positive and to collect pharmacovigilance data. Once the conditions to which the marketing authorization is subject are fulfilled, the conditional marketing authorization is transformed into a regular marketing authorization. If, however, the conditions are not fulfilled within the timeframe set by the EMA, the conditional marketing authorization ceases to be renewed.

The EMA has also implemented the so-called “PRIME” (PRiority MEDicines) status in order support the development and accelerate the approval of complex innovative medicinal products addressing an unmet medical need. PRIME status enables early dialogue with the relevant EMA scientific committees and, possibly, some payors and thus reinforces the EMA’s scientific and regulatory support. It also opens accelerated assessment of the MAA as PRIME status, is normally reserved for medicinal products that may benefit from accelerated assessment, i.e., medicines of major interest from a public health perspective, in particular from a therapeutic innovation perspective.

Finally, all medicinal products (i.e., decentralized and centralized procedures) may benefit from an MAA “under exceptional circumstances.” This marketing authorization is close to the conditional marketing authorization as it is

reserved to medicinal products to be approved for severe diseases or unmet medical needs and the applicant does not hold the complete data set legally required for the grant of a marketing authorization. However, unlike the conditional marketing authorization, the applicant does not have to provide the missing data and will never have to. The risk/benefit of the medicinal product is reviewed annually. As a result, although the MAA “under exceptional circumstances” is granted definitively, the risk/benefit balance of the medicinal product is reviewed annually and the marketing authorization is withdrawn in case the risk/benefit ratio is no longer favorable.

Pediatrics

Mandatory testing in the pediatric population is required in more and more jurisdictions. The European Union has enacted a complex and very stringent system that has inspired other jurisdictions, including the United States and Switzerland. Any application for approval of (i) a medicinal product containing a new active substance or (ii) a new therapeutic indication, pharmaceutical form or route of administration of an already authorized medicinal product that contains an active substance still protected by a supplementary protection certificate (“SPC”) or a patent that qualifies for an SPC, must include pediatric data. Otherwise, the application is not validated by the competent regulatory authority. The submission of pediatric data is mandatory in those cases, even if the application concerns adult use. Submission of pediatric data is not required or fully required if the EMA granted, respectively, a full or partial waiver to pediatric development. Moreover, that submission can be postponed if the EMA grants a deferral in order not to delay the submission of the MAA for the adult population.

The pediatric data are generated through the implementation of a pediatric investigation plan (“PIP”) that is proposed by the company after completion of the PK studies in adults and agreed upon by the EMA, typically after some modifications. The PIP lists all the studies to conduct and measures to take in order to prove the safety and efficacy of the future medicinal product when used in children. The EMA may agree to modify the PIP at the company’s request. The scope of the PIP is the adult therapeutic indication or the condition of which the adult application is part or even the mechanism of action of the active substance, at the EMA’s quasi-discretion. This very broad discretion enables the EMA to require companies to develop children indications that are different from the adult indications.

Completion of a PIP renders the company eligible for a pediatric reward, which can be six-month extension of the term of the SPC or, in the cases of orphan medicinal products, two additional years of market exclusivity. The reward is subject, among other conditions, to the PIP being fully completed, to the pediatric medicinal product being approved in all the member states, and to the results of the pediatric studies being mentioned, in one way or another (for example, the approval of a pediatric indication), in the summary of product characteristics of the product.

Post-Marketing Requirements

Many countries impose post-marketing requirements similar to those imposed in the United States, in particular safety monitoring or pharmacovigilance. In the European Union, pharmacovigilance data are the basis for the competent regulatory authorities imposing the conduct of post-approval safety or efficacy study, including on off-label use. Non-compliance with those requirements can result in significant financial penalties as well as the suspension or withdrawal of the marketing authorization.

Supplementary Protection Certificate and Regulatory Exclusivities

In some countries other than the United States, some of our patents may be eligible for limited patent term extension, depending upon the timing, duration and specifics of the regulatory approval of our product candidates and any future product candidates. Furthermore, authorized drugs and biologics may benefit from regulatory exclusivities (in addition to patent protection resulting from patents).

In the European Union, Regulation (EC) 469/2009 institutes a SPC. An SPC is an extension of the term of a patent that compensates for the patent protection lost because of the legal requirements to conduct safety and efficacy tests and to obtain a marketing authorization before placing a medicinal product on the market. An SPC may be applied for any active substance that is protected by a “basic patent” (a patent chosen by the patent holder, which can be a product, process or application patent) and has not been placed on the market as a medicinal product before having obtained a

marketing authorization in accordance with European Union pharmaceutical law. The term of the SPC is maximum five years, and the combined patent and SPC protection may not exceed fifteen years from the date of the first marketing authorization in the European Economic Area (“EEA”). SPC rights are restricted by both the basic patent and the marketing authorization, i.e., the SPC grants the same rights as those conferred by the basic patent but limited to the active substance covered by the marketing authorization (and any use as medicinal product approved afterwards).

While SPC are regulated at the European level, they are granted by the national patent offices. The grant of an SPC requires a basic patent granted by the national patent office and a marketing authorization, which is the first marketing authorization for the active substance as a medicinal product in the country. Furthermore, no SPC must have already been granted to the active substance, and the application for the SPC must be filed with the national patent office within six months of the first marketing authorization in the EEA or the grant of the basic patent, whichever is the latest.

In the future, we may apply for an SPC for one or more of our currently owned or licensed European patents to add patent life beyond their current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant MAA.

Furthermore, in the European Union, medicinal products may benefit from the following regulatory exclusivities: data exclusivity, market protection, market exclusivity, and pediatric reward.

A medicinal product that contains a new active substance (reference medicinal product) is granted eight years of data exclusivity followed by two years of market protection. Data exclusivity prevents other companies from referring to the non-clinical and clinical data in marketing authorization dossier of the reference medicinal product for submission of generic MAA purposes, and market protection prevents other companies from placing generics on the market. Pursuant to the concept of global marketing authorization, any further development of that medicinal product (e.g., new indication, new form, change to the active substance) by the marketing authorization holder does not trigger any new or additional protection. The authorization of any new development is considered as “falling” into the initial marketing authorization with regard to regulatory protection; hence, the new development only benefits from the regulatory protection that remains when it is authorized. The only exception is a new therapeutic indication that is considered as bringing a significant clinical benefit in comparison to the existing therapies. Such new indication will add one-year of market protection to the global marketing authorization, provided that it is authorized within the first eight years of authorization (i.e., during the data exclusivity period). Moreover, a new therapeutic indication of a “well-established substance” benefits from one-year data exclusivity but limited to the non-clinical and clinical data supporting the new indication. Any active substance approved for at least ten years in the EEA qualifies as well-established substance.

Biosimilars may be approved through an abbreviated approval pathway after the expiration of the eight-year data exclusivity period and may be marketed after the 10- or 11-year market protection period. The approval of biosimilars requires the applicant to demonstrate similarity between the biosimilar and the biological medicinal product and to submit the non-clinical and clinical data defined by the EMA. The biosimilar legal regime has been mainly developed through EMA’s scientific guidelines applicable to categories of biological active substances. Unlike in the United States, interchangeability is regulated by each member state.

Market exclusivity is a regulatory protection exclusively afforded to medicinal products with an orphan status. Market exclusivity precludes the EMA or a national regulatory authority from validating another MAA, and the European Commission or a national regulatory authority from granting another marketing authorization, for a same or similar medicinal product and a same therapeutic indication, for a period of ten years from approval (see above).

Pediatric reward is another regulatory exclusivity. Completion of a PIP renders the company eligible for a pediatric reward, which can be six-month extension of the term of the SPC or, in the cases of orphan medicinal products, two additional years of market exclusivity (see above). In case a PIP is completed on a voluntary basis, i.e., for an approved medicinal product that is not or no longer protected by an SPC or a basic patent, the pediatric reward takes the form of a “pediatric use marketing authorization” (“PUMA”). That special authorization does not fall into the global marketing authorization and thus benefits from eight years of data exclusivity followed by two or three years of market protection.

Other Healthcare Laws and Compliance Requirements Outside of the United States

Much like the Anti-Kickback Statute prohibition in the United States, the provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the European Union. The provision of benefits or advantages to physicians is mainly governed by the national anti-bribery laws of the member states, such as the UK Bribery Act 2010, or national anti-kickback provisions (France, Belgium, etc.). Infringement of these laws could result in substantial fines and imprisonment. In certain member states, payments made to physicians must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual member states. These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the member states. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

Much like the U.S. Foreign Corrupt Practices Act, to which we are subject, that prohibits corporations and individuals from engaging in certain activities to obtain or retain business or to influence a person working in an official capacity, similar rules apply to many other countries worldwide such as France ("Loi Sapin") or the United Kingdom (UK Bribery Act). It is illegal to pay, offer to pay or authorize the payment of anything of value to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity.

Pricing and Reimbursement

Although none of our product candidates has been commercialized for any indication, if they are approved for marketing, commercial success of our product candidates will depend, in part, upon the availability of third-party reimbursement from payors at the federal, state and private levels. Third-party payors include government healthcare programs, such as Medicare and Medicaid, private health insurers and managed-care plans. We anticipate third-party payors will provide reimbursement for our products. However, these third-party payors are increasingly challenging the price and examining the cost effectiveness of medical products and services. In addition, significant uncertainty exists as to the reimbursement status of newly approved healthcare products. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost effectiveness of our products. Our product candidates may not be considered cost effective. It is time consuming and expensive for us to seek reimbursement from third-party payors. Reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis.

We expect that there will continue to be a number of federal and state proposals to implement governmental pricing controls and limit the growth of healthcare costs, including the cost of prescription drugs.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product, or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products.

Historically, products launched in the European Union do not follow price structures of the United States and generally tend to be significantly lower.

Employees and Human Capital

As of March 1, 2023, we had 72 full-time employees and 3 part-time employees. Of the 72 full-time employees, 64 were engaged in research and development activities and 8 employees were engaged in finance, legal, human resources,

facilities and general management. We have no collective bargaining agreements with our employees, we have not experienced any work stoppages and we believe our relations with our employees are good.

Diversity and Inclusion

We are committed to our continued efforts to increase diversity and foster an inclusive work environment. We recruit the best qualified employees regardless of gender, ethnicity, or other protected traits and it is our policy to fully comply with all laws (domestic and foreign) applicable to discrimination in the workplace. Our diversity, equity and inclusion principles are also reflected in our employee training and policies. We continue to enhance our diversity, equity and inclusion policies that are guided by our executive leadership team.

Health, Safety and Well-Being

Protecting the health, safety and well-being of colleagues and , all of whom are essential to delivering our business objectives, is an integral part of how we operate. In response to the COVID-19 pandemic in 2020, we instituted a remote work protocol to help ensure the safety of our employees, our community, and to adhere to federal, state, and local requirements and the CDC recommendations of social distancing and limited public exposure in connection with the COVID-19 pandemic. We did not implement any furlough, layoff, or salary reductions during this time. In 2022, we continued to carry out our COVID-19 pandemic preparedness and response procedures to help ensure on-site workers at all of our locations remained safe and healthy. These precautions have been instrumental in protecting our workforce and helping ensure continued development of our pipeline. We continue to evaluate our pandemic preparedness and response procedures and the advisability of continuing operations based on federal, state and local guidance, evolving data concerning the pandemic and the best interests of our employees, third parties with whom we collaborate, and our stockholders.

Compensation and Benefits

Our commitment to pay equity for all colleagues is rooted in our core values and our intention is to continue to build a diverse and inclusive workforce. We are committed to equitable pay practices for employees based on role, education, experience, performance, and location and Armata conducts pay equity reviews on an annual basis. We believe that we must offer and maintain market competitive compensation and benefit programs for our employees in order to attract and retain qualified personnel. In addition to cash compensation, we provide equity compensation, healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, family leave, and employee assistance programs. We also have a defined contribution plan in the United States, enabling eligible employees to contribute a portion of their salaries and bonuses to the plans, and beginning in 2023 we will match, in cash, a portion of the employee contributions.

Corporate History and Reorganization

Our company was created as a result of a business combination of Armata (formerly known as AmpliPhi) with C3J that became effective on May 9, 2019. Immediately prior to the closing of the Merger, AmpliPhi changed its name to Armata Pharmaceuticals, Inc.

C3J's predecessor, C3 Jian, Inc., was incorporated under the laws of the State of California on November 4, 2005. On February 26, 2016, as part of a reorganization transaction, C3 Jian, Inc. merged with a wholly-owned subsidiary of C3J, and as part of this process, C3 Jian, Inc. was converted to a limited liability company organized under the laws of the State of California named C3 Jian, LLC. Prior to the Merger, C3J was privately held and was financed principally through a series of equity financings.

AmpliPhi was 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, AmpliPhi 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 November 2012, AmpliPhi completed the acquisition of Special Phage Holdings Pty Ltd, a

company based in Australia, with the goal of continuing research addressing the rapidly escalating problem of antibiotic resistance through the development of a series of bacteriophage-based treatments.

Our corporate headquarters are located in Marina del Rey, California, with an address of 4503 Glencoe Avenue, Marina del Rey, CA 90292, and our telephone number is +1 (310) 665-2928. We maintain a website at <https://www.armatapharma.com>, to which we regularly post copies of our press releases as well as additional information about us. We have included our website address in this annual report solely as an inactive textual reference.

Item 1A. Risk Factors

You should consider carefully the following information about the risks described below, together with the other information contained in this Annual Report and in our other public filings in evaluating our business. Investors should be aware that it is not possible to predict or identify all such factors and that the following is not meant to be a complete discussion of all potential risks or uncertainties. Additionally, our business is subject to general risks applicable to any company, such as economic conditions, geopolitical events, extreme weather and natural disasters. If known or unknown risks or uncertainties materialize, our business, financial condition, results of operations, and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline. The following discussion of risk factors contains forward-looking statements, as discussed in the Special Note Regarding Forward-Looking Statements section in this Annual Report.

Summary of Risk Factors

Our ability to execute on our business strategy is subject to a number of risks, which are discussed more fully below in this section. You should carefully consider these risks before making an investment in our common stock. These risks include, among others, the following:

- 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;
- Public health crises such as pandemics or similar outbreaks could materially and adversely affect our preclinical and clinical trials, business, financial condition and results of 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;
- We have never generated any revenue from product sales and may never be profitable;
- Maintaining and improving our financial controls and the requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified members of our Board of Directors;
- If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate financial statements on a timely basis could be impaired and our public reporting may be unreliable;
- If we fail to develop and maintain proper and effective processes and operating procedures as a non-traditional government contractor, our ability to adhere to the DoD and related entity standards could impact our ongoing and future development financing awards from the U.S. government;
- If we are unable to obtain FDA approval of our products, we will not be able to commercialize our products in the United States;
- Results from preclinical studies and Phase 1 or 2 clinical trials of our product candidates or from single-patient expanded access treatments may not be predictive of the results of later stage clinical trials;

- We are seeking to develop antibacterial agents using bacteriophage and synthetic phage technology, a novel approach, which makes it difficult to predict the time and cost of development. No bacteriophage products have been approved in the United States or elsewhere;
- Delays in our clinical trials could result in us not achieving anticipated developmental milestones when expected, increased costs and delay our ability to obtain regulatory approval for and commercialize our product candidates;
- We have not completed formulation development of our product candidates;
- 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;
- We must continue to develop manufacturing processes for our product candidates and any delay in or our inability to do so would result in delays in our clinical trials;
- Any deficiencies or failures in our ability to successfully transfer our manufacturing processes to our new manufacturing facility located in Los Angeles, and abide by cGMP regulations with respect to the new facility could lead to a material adverse impact on our business, results of operations, financial conditions, and prospects;
- We may conduct clinical trials for our products or product candidates outside the United States and the FDA may not accept data from such trials;
- We are subject to significant regulatory approval requirements, which could delay, prevent or limit our ability to market our product candidates;
- Failure to comply with health and data protection laws and regulations could lead to government enforcement actions (which could include civil or criminal penalties), private litigation and/or adverse publicity and could negatively affect our operating results and business;
- A variety of risks associated with our international operations could materially adversely affect our business;
- We may face risks associated with build activities related to the lease agreement entered into during 2021 for future research and manufacturing needs;
- We depend upon key personnel who may terminate their employment with us at any time and we may need to hire additional qualified personnel in order to obtain financing, pursue collaborations or develop and market our product candidates;
- We must manage a geographically dispersed organization;
- We rely on third parties to conduct our clinical trials, and their failure to perform their obligations in a timely or competent manner may delay development and commercialization of our product candidates;
- We may not be able to obtain materials or supplies necessary to conduct clinical trials or to manufacture our product candidates in a timely manner, which could have an adverse impact on our results of operations and may delay development and commercialization of our product candidates;
- We are dependent on patents, trade secrets and other forms of non-patent intellectual property protection. 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;
- If we are sued for infringing intellectual property rights of third parties or if we are forced to engage in an interference proceeding, it will be costly and time-consuming, and an unfavorable outcome in that litigation or interference would have a material adverse effect on our business;

- 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;
- There is a substantial risk of product liability claims in our business. If we do not obtain sufficient liability insurance, a product liability claim could result in substantial liabilities;
- Even if we receive regulatory approval to market our product candidates, the market may not be receptive to our product candidates upon their commercial introduction, which would negatively affect our ability to achieve profitability;
- The uncertainty associated with pharmaceutical reimbursement and related matters may adversely affect our business;
- Innoviva may exert a substantial influence on actions requiring stockholder vote, potentially in a manner that you do not support;
- The price of our common stock has been and may continue to be volatile;
- Conversion of our convertible notes will dilute the ownership interest of existing stockholders, or may otherwise depress the market price of our common stock; and
- We have never paid dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future.

Risks Related to Our Financial Condition and Need for Additional Capital

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.

The audited consolidated financial statements and accompanying notes thereto included disclosures that our recurring losses and negative cash flows from operations raise substantial doubt about our ability to continue as a going concern. Our financial statements as of December 31, 2022 and December 31, 2021 were prepared under the assumption that we will continue as a going concern and do not include any adjustments that might result from the outcome of this uncertainty. As of December 31, 2022, we had unrestricted cash and cash equivalents of \$14.9 million, and we have had recurring losses from operations and negative operating cash flows since inception.

We will need to raise additional capital to support our operations and product development activities. In the near term, we expect to continue to fund our operations, if at all, primarily through equity and debt financings. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, financial markets in the United States and worldwide. We may also seek funds through arrangements with collaborators, grant agencies or others that may require us to relinquish rights to the product candidates that we might otherwise seek to develop or commercialize independently. 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.

On March 27, 2020, we completed a private placement (“2020 Private Placement”) transaction in which we sold to Innoviva a total of 8,710,800 newly issued shares of the Company’s common stock and warrants to purchase 8,710,800 shares of common stock, with an exercise price per share of \$2.87. The 2020 Private Placement was closed in two tranches for total aggregate gross proceeds of \$25.0 million.

During 2021, we entered into a securities purchase agreement in connection with certain private placements. See Note 2 to consolidated financial statements contained in this report for a description of the 2021 private placements.

On October 28, 2021, we completed a private placement (the “October 2021 Private Placement”) transaction in which we sold to CFF and Innoviva SO (a wholly owned subsidiary of Innoviva, Inc., a principal stockholder of us) a total of 2,121,213 shares of our newly issued shares of common stock, par value \$0.01 per share, for aggregate gross proceeds of approximately \$7.0 million, before deducting transaction expenses.

On February 9, 2022, we entered into a securities purchase agreement to sell our common stock and warrants to Innoviva (“February 2022 Private Placement”). Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases occurred in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased 5,385,208 shares of common stock and warrants to purchase 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

On January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva SO. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by our domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of our assets and the subsidiary guarantors.

While we believe that our existing resources will be sufficient to fund our planned operations into the third quarter of 2023, we cannot provide assurances that our estimates are accurate, 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.

In addition, raising additional capital through the sale of securities could cause significant dilution to our stockholders. 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.

Public health crises such as pandemics or similar outbreaks could materially and adversely affect our preclinical and clinical trials, business, financial condition and results of operations.

Any significant outbreak of contagious diseases and other adverse public health developments in countries where we operate could have a material and adverse effect on our business, financial condition and results of operations. As a result of the COVID-19 pandemic and the related responses from government authorities, our operations, strategy, and financial performance have been affected in a number of ways, and may be further adversely impacted by a variety of factors, including, but not limited to, the following:

Some examples of potential disruptions that have resulted or may result from COVID-19 include but are not limited to:

- delays or difficulties in enrolling patients in our clinical trials;
- delays or difficulties in initiating or expanding clinical trials, including delays or difficulties with clinical site initiation and recruiting clinical site investigators and clinical site staff;
- increased rates of patients withdrawing from our clinical trials following enrollment as a result of contracting COVID-19 or other health conditions or being forced to quarantine;
- interruption of key clinical trial activities, such as clinical trial site data monitoring and efficacy, safety and translational data collection, processing and analyses, due to limitations on travel imposed or recommended by federal, state or local governments, employers and others or interruption of clinical trial subject visits, which may impact the collection and integrity of subject data and clinical study endpoints;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- delays or disruptions in preclinical experiments and IND-enabling studies due to restrictions of on-site staff and unforeseen circumstances at contract research organizations, or CROs, and vendors;
- interruption or delays in the operations of the FDA and comparable foreign regulatory agency;
- a slow down or stoppage in the supply chain of our raw materials, components, equipment and distribution services used to manufacture our products and deliver to clinical investigator sites;
- delays in receiving approval from local regulatory authorities to initiate our planned clinical trials;
- limitations on employee or other resources that would otherwise be focused on the conduct of our clinical trials and pre-clinical work, including because of sickness of employees or their families, the desire of employees to avoid travel or contact with large groups of people, an increased reliance on working from home, school closures or mass transit disruptions or a refusal to comply with vaccine mandates;

- changes in regulations as part of a response to the COVID-19 pandemic which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue the clinical trials altogether;
- delays in necessary interactions with regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government or contractor personnel; and
- interruption or delays in the operations of the FDA and comparable foreign regulatory agency.

As the COVID-19 pandemic reaches an endemic state, the extent to which it may affect our clinical trials, business operations, financial condition and results of operations remains dependent on future developments, which are highly uncertain and cannot be predicted at this time. Although COVID-19 infection rates and severity have decreased recently, the occurrence, spread, severity and duration of any new outbreaks or resurgences, including the emergence and spread of new variants of COVID-19, actions taken to contain the resurgences or variants, and economic repercussions of the virus remain uncertain. We continue to evaluate the nature and extent to which COVID-19 may impact our business and 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.

As of December 31, 2022, our accumulated deficit was \$239.8 million and we expect to incur losses for the foreseeable future. We have devoted, and will continue to devote for the foreseeable future, substantially all of our resources to research and development of our product candidates. For the year ended December 31, 2022 and the year ended December 31, 2021, we had losses from operations of \$36.9 million and \$23.8 million, respectively. Additional information regarding our results of operations may be found in our consolidated financial statements and in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in Item 2 in this Annual Report.

We have never generated any revenue from product sales and may never be profitable.

Clinical trials and activities associated with discovery research are costly. We do not expect to generate any revenue from the commercial sales of our product candidates in the near term, and we expect to continue to have significant losses for the foreseeable future.

Our ability to generate meaningful revenue and achieve profitability depends on successfully completing the development of, and obtaining the regulatory approvals necessary to, commercialize our product candidates. If any of our product candidates fail in clinical trials or if any of our product candidates do not gain regulatory approval, or if any of our product candidates, if approved, fail to achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our ability to generate future revenues from product sales depends heavily on our success in:

- completing research and preclinical and clinical development of our product candidates;
- seeking and obtaining regulatory and marketing approvals for product candidates for which we complete clinical trials;
- developing a sustainable, scalable, reproducible, and transferable manufacturing process for our product candidates;
- launching and commercializing product candidates for which we obtain regulatory and marketing approval, either by establishing a sales force, marketing and distribution infrastructure, or by collaborating with a partner;

- obtaining market acceptance of any approved products;
- addressing any competing technological and market developments;
- implementing additional internal systems and infrastructure, as needed;
- identifying and validating new product candidates;
- negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter;
- maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel.

Even if one or more of the product candidates that we develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product. Our expenses could increase beyond expectations if we are required by the FDA, the European Medicines Agency (“EMA”), or other foreign regulatory authorities to perform clinical trials and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

Maintaining and improving our financial controls and the requirements of being a public company may strain our resources, divert management’s attention and affect our ability to attract and retain qualified members of our Board of Directors.

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the rules of the NYSE American. The requirements of these rules and regulations increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and place strain on our personnel, systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and financial condition.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. Ensuring that we have adequate internal financial and accounting controls and procedures in place is a costly and time-consuming effort that needs to be re-evaluated frequently.

We currently do not have an internal audit group, and we may need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Implementing any appropriate changes to our internal controls may require specific compliance training for our directors, officers and employees, entail substantial costs to modify our existing accounting systems, and take a significant period of time to complete. Such changes may not, however, be effective in maintaining the adequacy of our internal controls, and any failure to maintain that adequacy, or consequent inability to produce accurate financial statements on a timely basis, could increase our operating costs and could materially impair our ability to operate our business. Moreover, effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent fraud.

In accordance with NYSE American rules, we are required to maintain a majority independent board of directors. The various rules and regulations applicable to public companies make it more difficult and more expensive for us to maintain directors’ and officers’ liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to maintain coverage. If we are unable to maintain adequate directors’ and officers’ insurance, our ability to recruit and retain qualified officers and directors will be significantly curtailed.

If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate financial statements on a timely basis could be impaired and our public reporting may be unreliable.

We are required to maintain internal control over financial reporting adequate to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our consolidated financial statements in accordance with generally accepted accounting principles. We do not expect that our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. Over time, controls may become inadequate because changes in conditions or deterioration in the degree of compliance with policies or procedures may occur. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Material weaknesses in our internal controls have been identified in the past, and we cannot assure you that significant deficiencies or material weaknesses in our internal control over financial reporting will not be identified in the future.

If we are unable to maintain effective controls and procedures, or identify any future material weaknesses, the accuracy and timing of our financial reporting may be adversely affected, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports and we may experience a loss of public confidence, which could have an adverse effect on our business, financial condition and the market price of our common stock.

If we fail to develop and maintain proper and effective processes and operating procedures as a non-traditional government contractor, our ability to adhere to the Department of Defense and related entity standards could impact our ongoing and future development financing awards from the U.S. government.

On June 15, 2020, we entered into an agreement with the Medical Technology Enterprise Consortium ("MTEC Agreement"), pursuant to which we have started to receive a \$15 million grant and have entered into a three-year program administered by the DoD through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024. We plan to use the grant to partially fund a Phase 1b/2a, randomized, double-blind, placebo-controlled, dose-escalation clinical study of Armata's therapeutic phage-based candidate, AP-SA02, for the treatment of *S. aureus* bacteremia.

As an organization, we are relatively new to government contracting and new to the regulatory compliance obligations that such contracting entails. If we fail to maintain compliance with those obligations, we may be subject to potential liability and may result in the termination of our government contracts, including the MTEC Agreement.

Government contracts and grants normally contain additional requirements that may increase our costs of doing business and expose us to liability for failure to comply with these terms and conditions. These requirements include, for example:

- tracking of contract costs and maintenance of effective controls over tracking of such costs;
- completion and submission of periodic reporting packages;
- mandatory financial audits and potential liability for failing such audits; and
- mandatory socioeconomic compliance requirements, including labor standards, non-discrimination, and affirmative action programs, and environmental compliance requirements.

While we believe we are in compliance with all requirements under the MTEC Agreement, potential failure to maintain such compliance could result in reduction of the grant or termination of the contract, which could in turn negatively impact our business.

Risks Related to Our Business

We have limited operating history, have incurred significant operating losses since inception and expects to incur significant operating losses for the foreseeable future. We may never become profitable or, if achieved, be able to sustain profitability.

To date, we have funded our operations primarily through private placement offerings of equity securities. As of December 31, 2022, we had cash and cash equivalents of \$14.9 million. We have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future as we continue our development programs for our product candidates. We maintain our cash and cash equivalents with high quality, accredited financial institutions. However, some of these accounts exceed federally insured limits, and, while we believe the Company is not exposed to significant credit risk due to the financial strength of these depository institutions or investments, the failure or collapse of one or more of these depository institutions or default on these investments could materially adversely affect our ability to recover these assets and/or materially harm our financial condition.

We currently generate no revenue from product sales, and may never be able to commercialize our product candidates, or other future product candidates. We do not currently have the required approvals to market our product candidates and we may never receive them. We may not be profitable even if we or any of our future development partners succeed in commercializing any of our product candidates. Because of the numerous risks and uncertainties associated with developing and commercializing our product candidates, we are unable to predict the extent of any future losses or when it will become profitable, if at all.

If we are unable to obtain FDA approval of our products, we will not be able to commercialize our products in the United States.

We need FDA approval prior to marketing our product candidates in the United States. If we fail to obtain FDA approval to market our product candidates, we will be unable to sell our products in the United States, which will significantly impair our ability to generate any revenues.

This regulatory review and approval process, which includes evaluation of pre-clinical studies and clinical trials of our product candidates as well as the evaluation of our manufacturing processes, is lengthy, expensive and uncertain. To receive approval, we must, among other things, demonstrate with substantial evidence from well-controlled clinical trials that our product candidates are both safe and effective for each indication for which approval is sought. Satisfaction of the approval requirements typically takes several years and the time needed to satisfy them may vary substantially, based on the type, complexity and novelty of the product. We do not know if or when we might receive regulatory approvals, including approval for an Investigational New Drug application (“IND application”), for any of our product candidates currently under development, other than for our product candidates AP-PA02 and AP-SA02, for which we received FDA clearance of our respective IND applications. Moreover, approvals that we obtain may not cover all of the clinical indications for which we are seeking approval, or could contain significant limitations in the form of narrow indications, warnings, precautions or contra-indications with respect to conditions of use. In such event, our ability to generate revenues from such products would be greatly reduced and our business would be harmed.

The FDA has substantial discretion in the approval process and may either refuse to consider any of our applications for substantive review or may form the opinion after review of our data that one or more of our applications are insufficient to approve if we our product candidates. If the FDA does not consider or approve any of our applications, it may require that we conduct additional clinical, pre-clinical or manufacturing validation studies and submit that data before it will reconsider our application. Depending on the extent of these or any other studies, approval of any applications that we submit may be delayed by several years, or may require us to expend more resources than we have available. It is also possible that additional studies, if performed and completed, may not be successful or considered sufficient by the FDA for approval or even to make our applications approvable. If any of these outcomes occur, we may be forced to abandon one or more of our applications for approval, which might significantly harm our business and prospects.

It is possible that none of our products or any product we may seek to develop in the future will ever obtain the appropriate regulatory approvals necessary for us to commence product sales. Any delay in obtaining, or an inability to obtain, applicable regulatory approvals would prevent us from commercializing our products, generating revenues and achieving and sustaining profitability.

Results from preclinical studies and Phase 1 or 2 clinical trials of our product candidates or from single-patient expanded access treatments may not be predictive of the results of later stage clinical trials.

Preclinical studies, including studies of our product candidates in animal disease models, may not accurately predict the result of human clinical trials of those product candidates. In particular, promising animal studies suggesting the efficacy of prototype phage products in the treatment of bacterial infections, such as *P. aeruginosa* and *S. aureus*, may not predict the ability of these products to treat similar infections in humans. Despite promising data in our completed Phase 1 clinical trials, our phage technology may be found not to be safe or efficacious in treating bacterial infections alone or in combination with other agents, when studied in later-stage clinical trials.

In addition, we have used our bacteriophage technology in the area of targeted medicine under single-patient expanded access guidelines, which permit the use of phage therapy outside of clinical trials, in the United States and Australia. Despite prior single-patient expanded access successes, no assurance can be given that we will have similar single-patient expanded access treatment successes in the future. Single-patient expanded access is a term that is used to refer to the use of an investigational drug or therapy outside of a clinical trial to treat a patient with a serious or immediately life-threatening disease or condition who has no comparable or satisfactory alternative treatment options. Regulators often allow single-patient expanded access on a case-by-case basis for an individual patient or for defined groups of patients with similar treatment needs. In some countries, such as Australia, the treating physician can administer treatment under single-patient expanded access guidelines without pre-approval from the applicable regulatory authority.

To satisfy FDA or foreign regulatory approval standards for the commercial sale of our product candidates, we must demonstrate in adequate and controlled clinical trials that our product candidates are safe and effective. Success in early clinical trials, including Phase 1 and Phase 2 trials, or in our single-patient expanded access program does not ensure that later clinical trials will be successful. Our initial results from early stage clinical trials or our single-patient expanded access program also may not be confirmed by later analysis or subsequent larger clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials and most product candidates that commence clinical trials are never approved for commercial sale.

We are seeking to develop antibacterial agents using bacteriophage and synthetic phage technology, a novel approach, which makes it difficult to predict the time and cost of development. No bacteriophage products have been approved in the United States or elsewhere.

We are developing our product candidates with bacteriophage and synthetic phage technology. We have not, nor to our knowledge has any other company, received regulatory approval from the FDA or equivalent foreign agencies for a pharmaceutical drug based on this approach. While *in vitro* studies have characterized the behavior of bacteriophages in cell cultures and there exists a body of literature regarding the use of phage therapy in humans, the safety and efficacy of phage therapy in humans has not been extensively studied in well-controlled modern clinical trials. Most of the prior research on phage-based therapy was conducted in the former Soviet Union prior to and immediately after World War II and lacked appropriate control group design or lacked control groups at all. Furthermore, the standard of care has changed substantially during the ensuing decades since those studies were performed, diminishing the relevance of prior claims of improved cure rates. We cannot be certain that our approach will lead to the development of approvable or marketable drugs.

Developing phage-based therapies on a commercial scale will also require developing new manufacturing processes and techniques. We and our third-party collaborators may experience delays in developing manufacturing capabilities for our product candidates and may not be able to do so at the scale required to efficiently conduct the clinical trials required

to obtain regulatory approval of our product candidates, or to manufacture commercial quantities of our products, if approved.

In addition, the FDA or other regulatory agencies may lack experience in evaluating the safety and efficacy of drugs based on these approaches, which could lengthen the regulatory review process, increase our development costs and delay or prevent commercialization of our product candidates.

Delays in our clinical trials could result in us not achieving anticipated developmental milestones when expected, increased costs and delay our ability to obtain regulatory approval for and commercialize our product candidates.

Delays in our ability to commence or enroll patients for our clinical trials could result in us not meeting anticipated clinical milestones and could materially impact our product development costs and delay regulatory approval of our product candidates. Planned clinical trials may not be commenced or completed on schedule, or at all. Clinical trials can be delayed for a variety of reasons, including:

- delays in the development of manufacturing capabilities for our product candidates to enable their consistent production at clinical trial scale;
- failures in our internal manufacturing operations that result in our inability to consistently and timely produce bacteriophages in sufficient quantities to support our clinical trials;
- the availability of financial resources to commence and complete our planned clinical trials;
- delays in reaching a consensus with clinical investigators on study design;
- delays in reaching a consensus with regulatory agencies on trial design or in obtaining regulatory approval to commence a trial;
- delays in obtaining clinical materials;
- slower than expected patient recruitment for participation in clinical trials;
- failure by clinical trial sites, other third parties, or us to adhere to clinical trial agreements;
- delays in reaching agreement on acceptable clinical trial agreement terms with prospective sites or obtaining institutional review board approval;
- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue the clinical trials altogether; and
- adverse safety events experienced during our clinical trials.

If we do not successfully commence or complete our clinical trials on schedule, the price of our common stock may decline.

Completion of clinical trials depends, among other things, on our ability to enroll a sufficient number of patients, which is a function of many factors, including:

- the therapeutic endpoints chosen for evaluation;
- the eligibility criteria defined in the protocol;

- the perceived benefit of the product candidate under study;
- the size of the patient population required for analysis of the clinical trial's therapeutic endpoints;
- our ability to recruit clinical trial investigators and sites with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents;
- delays or difficulties in enrolling patients in our clinical trials as a result of impacts associated with the COVID-19 pandemic; and
- competition for patients from clinical trials for other treatments.

We may experience difficulties in enrolling patients in our clinical trials, which could increase the costs or affect the timing or outcome of these clinical trials. This is particularly true with respect to diseases with relatively small patient populations.

We have not completed formulation development of our product candidates.

The development of our bacteriophage product candidates requires that we isolate, select and combine a number of bacteriophages that target the desired bacteria for that product candidate. The selection of bacteriophages for any of our product candidates is based on a variety of factors, including without limitation the ability of the selected phages, in combination, to successfully kill the targeted bacteria, the degree of cross-reactivity of the individual phages with the same part of the bacterial targets, the ability of the combined phages to satisfy regulatory requirements, our ability to manufacture sufficient quantities of the phages, intellectual property rights of third parties, and other factors. While we have selected initial formulations of AP-SA02 for the treatment of *S. aureus* infections, and the initial formulations of AP-PA02 for the treatment of *P. aeruginosa* infections in CF patients. There can be no assurance that these initial formulations will be the final formulations of AP-SA02 or AP-PA02 for commercialization if approved. If we are unable to complete formulation development of our product candidates in the time frame that we have anticipated, then our product development timelines, and the regulatory approval of our product candidates, could be delayed.

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.

Before we can obtain regulatory approval for a product candidate, we must undertake extensive clinical testing in humans to demonstrate safety and efficacy to the satisfaction of the FDA or other regulatory agencies. Clinical trials of new drug candidates sufficient to obtain regulatory marketing approval are expensive and take years to complete.

We cannot be certain of successfully completing clinical testing within the time frame we have planned, or at all. We may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent us from receiving regulatory approval or commercializing our product candidates, including the following:

- our clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and/or preclinical testing or to abandon programs;
- the results obtained in earlier stage clinical testing may not be indicative of results in future clinical trials;
- clinical trial results may not meet the level of statistical significance required by the FDA or other regulatory agencies;
- we, or regulators, may suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks; and

- our product candidates may have unintended or undesirable effects on patients that may delay or preclude regulatory approval of our product candidates or limit their commercial use, if approved.

We must continue to develop manufacturing processes for our product candidates and any delay in or our inability to do so would result in delays in our clinical trials.

We are developing novel manufacturing processes for our product candidates at our facility in Marina Del Rey (near Los Angeles), California. The manufacturing processes for our product candidates, and the scale-up of such processes for clinical trials, is novel, and there can be no assurance that we will be able to complete this work in a timely manner, if at all. The manufacture of our product candidates requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers often encounter difficulties in production, particularly in scaling up for commercial production. These problems include difficulties with production costs and yields, quality control, including stability of the equipment and product candidates and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we were to encounter any of these difficulties, our ability to provide our products to patients in our clinical trials or to commercially launch a product would be jeopardized. Any delay or interruption could postpone the completion of our clinical trials, increase the costs associated with maintaining our clinical trial program, and, depending upon the period of delay, require us to commence new trials at significant additional expense or terminate the trials completely.

Any delay in the development or scale up of these manufacturing processes could delay the start of clinical trials and harm our business. In the event our facility in Marina Del Rey does not receive a satisfactory cGMP inspection for the manufacture of our product candidates, we may need to fund additional modifications to our manufacturing process, conduct additional validation studies, or find alternative manufacturing facilities, any of which would result in significant cost to us as well as a delay of up to several years in obtaining approval for such product candidate.

Our manufacturing facility will be subject to ongoing periodic inspection by the FDA for compliance with cGMP regulations. Compliance with these regulations and standards is complex and costly, and there can be no assurance that we will be able to comply. Any failure to comply with applicable regulations could result in sanctions being imposed (including fines, injunctions and civil penalties), failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecution.

Any of these factors could cause a delay of clinical trials, regulatory submissions, approvals or commercialization of our products, entail higher costs or result in our being unable to effectively commercialize our products. Furthermore, if we fail to deliver the required commercial quantities on a timely basis, pursuant to provided specifications and at commercially reasonable prices, we may be unable to meet demand for our products and would lose potential revenues.

Any deficiencies or failures in our ability to successfully transfer our manufacturing processes to our new manufacturing facility located in Los Angeles, and abide by cGMP regulations with respect to the new facility could lead to a material adverse impact on our business, results of operations, financial conditions, and prospects.

In October 2021, we entered into a lease for office and research and development space under a lease in Los Angeles, CA (the “2021 Lease”), which also includes a new manufacturing facility. Our new manufacturing facility will require satisfactory cGMP inspections for the manufacture of our product candidates as we transfer our manufacturing processes to the new facility. The new facility will be subject to ongoing periodic inspection by the FDA for compliance with cGMP regulations. Compliance with these regulations and standards is complex and costly, and there can be no assurance that we will be able to comply. Any failure to comply with applicable regulations could result in sanctions being imposed (including fines, injunctions, and civil penalties), failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions, and criminal prosecution. If we cannot successfully produce material that conforms to our specifications and cGMP requirements of any applicable regulatory agency, we may not be able to secure or maintain approval for our new manufacturing facility.

We may conduct clinical trials for our products or product candidates outside the United States and the FDA may not accept data from such trials.

We completed an investigator-sponsored clinical trial of AP-SA01 at the University of Adelaide in Australia for CRS in December 2016. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of such study data by the FDA is subject to certain conditions. For example, the study must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The study population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. Generally, the patient population for any clinical studies conducted outside of the United States must be representative of the population for whom we intend to label the product in the United States. In addition, such studies would be subject to the applicable local laws and FDA acceptance of the data would be dependent upon its determination that the studies also complied with all applicable U.S. laws and regulations. There can be no assurance the FDA will accept data from trials conducted outside of the United States. Further, with respect to AP-SA01, we have changed the product formulation to AP-SA02 and any work related to AP-SA01 may not be relevant to the FDA or other international regulatory authorities.

We may need to license additional intellectual property rights.

The development and commercialization of phage-based antibacterial agents may require us to obtain rights to intellectual property from third parties. We may also determine that it is necessary or advisable to license other intellectual property from third parties. There can be no assurance that such intellectual property rights would be available on commercially reasonable terms, if at all.

We are subject to significant regulatory approval requirements, which could delay, prevent or limit our ability to market our product candidates.

Our research and development activities, preclinical studies, clinical trials and the anticipated manufacturing and marketing of our product candidates are subject to extensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in Europe and elsewhere. There can be no assurance that our manufacturing facilities will satisfy the requirements of the FDA or comparable foreign authorities. We require the approval of the relevant regulatory authorities before we may commence commercial sales of our product candidates in a given market. The regulatory approval process is expensive and time-consuming, and the timing of receipt of regulatory approval is difficult to predict. Our product candidates could require a significantly longer time to gain regulatory approval than expected, or may never gain approval. We cannot be certain that, even after expending substantial time and financial resources, we will obtain regulatory approval for any of our product candidates. A delay or denial of regulatory approval could delay or prevent our ability to generate product revenues and to achieve profitability.

Changes in regulatory approval policies during the development period of any of our product candidates, changes in, or the enactment of, additional regulations or statutes, or changes in regulatory review practices for a submitted product application may cause a delay in obtaining approval or result in the rejection of an application for regulatory approval.

Regulatory approval, if obtained, may be made subject to limitations on the indicated uses for which we may market a product. These limitations could adversely affect our potential product revenues. Regulatory approval may also require costly post-marketing follow-up studies. In addition, the labeling, packaging, adverse event reporting, storage, advertising, promotion and record-keeping related to the product will be subject to extensive ongoing regulatory requirements. Furthermore, for any marketed product, its manufacturer and its manufacturing facilities will be subject to continual review and periodic inspections by the FDA or other regulatory authorities. Failure to comply with applicable regulatory requirements may, among other things, result in fines, suspensions of regulatory approvals, product recalls, product seizures, operating restrictions and criminal prosecution.

Failure to comply with health and data protection laws and regulations could lead to government enforcement actions (which could include civil or criminal penalties), private litigation and/or adverse publicity and could negatively affect our operating results and business.

We and any potential collaborators may be subject to federal, state and foreign data protection laws and regulations (i.e., laws and regulations that address privacy and data security). In the United States, numerous federal and state laws and regulations, including federal health information privacy laws, state data breach notification laws, state health information privacy laws and federal and state consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure and protection of health-related and other personal information could apply to our operations or the operations of our collaborators. In addition, we may obtain health information from third parties (including research institutions from which we obtain clinical trial data) that are subject to privacy and security requirements under HIPAA. Depending on the facts and circumstances, we could be subject to criminal penalties if we knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

International data protection laws, including Regulation 2016/679, known as the General Data Protection Regulation (“GDPR”) may also apply to health-related and other personal information obtained outside of the United States. The GDPR went into effect on May 25, 2018. The GDPR introduced new data protection requirements in the European Union, as well as potential fines for non-compliant companies of up to the greater of €20 million or 4% of annual global revenue. The regulation imposes numerous new requirements for the collection, use and disclosure of personal information, including more stringent requirements relating to consent and the information that must be shared with data subjects about how their personal information is used, the obligation to notify regulators and affected individuals of personal data breaches, extensive new internal privacy governance obligations and obligations to honor expanded rights of individuals in relation to their personal information (e.g., the right to access, correct and delete their data). In addition, the GDPR includes restrictions on cross-border data transfer. The GDPR will increase our responsibility and liability in relation to personal data that we process, and we may be required to put in place additional mechanisms to ensure compliance with the new EU data protection rules. Further, the United Kingdom’s vote in favor of exiting the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear whether the United Kingdom will enact data protection legislation equivalent to the GDPR and how data transfers to and from the United Kingdom will be regulated.

In addition, California recently enacted legislation that has been dubbed the first “GDPR-like” law in the United States. Known as the California Consumer Privacy Act (“CCPA”), it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, provide such consumers new ways to opt-out of certain sales of personal information, and allow for a new cause of action for data breaches. The CCPA may impact (possibly significantly) our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

Compliance with U.S. and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include civil or criminal penalties), private litigation and/or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects about whom we or our potential collaborators obtain information, as well as the providers who share this information with us, may contractually limit our ability to use and disclose the information. Claims that we have violated individuals’ privacy rights, failed to comply with data protection laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time consuming to defend and could result in adverse publicity that could harm our business.

A variety of risks associated with our international operations could materially adversely affect our business.

In addition to our U.S. operations, we have operations and a subsidiary in Australia and a subsidiary company in the United Kingdom. We face risks associated with our international operations, including possible unfavorable regulatory,

pricing and reimbursement, political, tax and labor conditions, which could harm our business. We are subject to numerous risks associated with international business activities, including:

- compliance with differing or unexpected regulatory requirements for the development, manufacture and, if approved, commercialization of our product candidates;
- difficulties in staffing and managing foreign operations;
- foreign government taxes, regulations and permit requirements;
- U.S. and foreign government tariffs, trade restrictions, price and exchange controls and other regulatory requirements;
- anti-corruption laws, including the Foreign Corrupt Practices Act;
- economic weakness, including inflation, natural disasters, war, events of terrorism or political instability in particular foreign countries;
- fluctuations in currency exchange rates, which could result in increased operating expenses and reduced revenues, and other obligations related to doing business in another country;
- compliance with tax, employment, immigration and labor laws, regulations and restrictions for employees living or traveling abroad;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- changes in diplomatic and trade relationships; and
- challenges in enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States.

These and other risks associated with our international operations may materially adversely affect our business, financial condition and results of operations.

We may face risks associated with build activities related to the lease agreement entered into during 2021 for future research and manufacturing needs

On October 28, 2021, we entered into a lease for office and research and development space under a non-cancellable lease in Los Angeles, CA (the “2021 Lease”). Under the 2021 Lease, together with the landlord, we are required to engage in significant construction activities prior to occupation of the leased premises, which began in 2022. While we are entitled to receive an allowance for tenant improvements of up to \$7.3 million, we are required to expend our existing cash resources for construction costs in advance of the landlord reimbursing us for these costs and for all amounts above the agreed tenant improvement allowance. We are subject to potential construction delays and the resultant increased costs and risks, as well as uncertainties related to the contractors’ ability to build in conformity with plans, specifications, budgeted costs and timetables. If the contractors or developer fails to perform, we may modify the construction contract or resort to legal action to compel performance. A developer’s or builder’s performance may also be affected or delayed by conditions beyond that party’s control, such as the supply chain delays. The landlord is also subject to uncertainties associated with obtaining permits for development, environmental and land use concerns of governmental entities. All the factors above could have a negative impact on our financial positions and development plans for our business. Moreover, as we rarely engage in construction activities, substantial renovation and construction

activities could require a significant amount of management's time and attention, diverting the attention of our management from other strategic matters.

Innoviva, our principal stockholder, beneficially owns greater than 50% of our outstanding shares of common stock, which will cause us to be deemed a "controlled company" under the rules of NYSE. In addition, Innoviva's interests in our business may be different than our other stockholders.

Upon closing of both the first and second tranche of the February 2022 Private Placement, Innoviva owned approximately 70% of our outstanding shares and 19,364,647 warrants to purchase shares of our common stock. If Innoviva were to exercise the warrants held by them, they would hold approximately 80.1% of our issued and outstanding shares of common stock. As a result, Innoviva owns more than 50% of our outstanding shares, and as such, we are a "controlled company" under the rules of the NYSE. Under these rules, a company of which more than 50% of the voting power is held by an individual, a group or another company is a "controlled company" and, as such, may elect to be exempt from certain corporate governance requirements, including requirements that:

- a majority of the board of directors consist of independent directors;
- the board of directors maintain a nominating and corporate governance comprised solely of independent directors and with a written charter addressing the committee's purpose and responsibilities; and
- the board of directors maintain a compensation committee comprised solely of independent directors and with a written charter addressing the committee's purpose and responsibilities.

As a "controlled company," we may elect to rely on some or all of these exemptions, however, we do not intend take advantage of any of these exemptions. Despite the fact we do not intend to take advantage of these exemptions, our status as a controlled company could make our common stock less attractive to some investors or otherwise harm our stock price.

We depend upon key personnel who may terminate their employment with us at any time and we may need to hire additional qualified personnel in order to obtain financing, pursue collaborations or develop and market our product candidates

Our success depends on our continued ability to attract, retain and motivate highly qualified management, clinical, manufacturing, and scientific personnel and on our ability to develop and maintain important relationships with leading academic institutions, clinicians and scientists. Our success will depend on our ability to retain and motivate personnel and hire additional qualified personnel when required, including personnel with expertise in clinical trials, government regulation, cGMP manufacturing, and other areas. Competition for qualified personnel in the biotechnology field is intense. We face competition for personnel from other biotechnology and pharmaceutical companies, universities, public and private research institutions and other organizations. We also face competition from other more well-funded and well-established businesses, and we may also be viewed as a riskier choice from a job stability perspective due to our relative newer status than longer existing biotech and pharmaceutical companies. If we are unable to attract and retain key personnel and advisors, it may negatively affect our ability to successfully develop, test, commercialize and market our products and product candidates.

We must manage a geographically dispersed organization.

While we are a small company, we currently have operations in the United States and Australia. In the future, we may also locate facilities in other locations based on proximity to personnel with the expertise needed to research, develop and manufacture phase-based therapeutics, costs of operations or other factors. Managing our organization across multiple locations and multiple time zones may reduce our efficiency, increase our expenses and increase the risk of operational difficulties in the execution of our plans.

Because the Merger resulted in an ownership change under Section 382 of the Internal Revenue Code for Armata, Armata's pre-Merger net operating loss carryforwards and certain other tax attributes will be subject to limitations. The net operating loss carryforwards and other tax attributes of C3J may also be subject to limitations as a result of ownership changes.

On May 9, 2019, our predecessor company, C3J Therapeutics, Inc. ("C3J") completed a reverse merger with AmpliPhi Biosciences Corporation, a bacteriophage development company ("AmpliPhi"), where Ceres Merger Sub, Inc., a wholly owned subsidiary of AmpliPhi, merged with and into C3J (the "Merger").

If a corporation undergoes an "ownership change" within the meaning of Section 382 of the Internal Revenue Code of 1986, as amended, such corporation's net operating loss carryforwards and certain other tax attributes arising from before the ownership change are subject to limitations on use after the ownership change. In general, an ownership change occurs if there is a cumulative change in the corporation's equity ownership by certain stockholders that exceeds fifty percentage points over a rolling three-year period. Similar rules may apply under state tax laws.

The Merger resulted in an ownership change for AmpliPhi and, accordingly, AmpliPhi's net operating loss carryforwards and certain other tax attributes may be subject to limitations (or disallowance) on their use after the Merger. C3J's net operating loss carryforwards may also be subject to limitation as a result of prior shifts in equity ownership and/or the Merger. Additional ownership changes in the future could result in additional limitations on our net operating loss carryforwards. Consequently, even if we achieve profitability, we may not be able to utilize a material portion of our net operating loss carryforwards and other tax attributes, which could have a material adverse effect on cash flow and results of operations.

As of December 31, 2022, we had federal net operating loss carryforwards of approximately \$145 million.

Risks Related to Our Reliance on Third Parties

We rely on third parties to conduct our clinical trials, and their failure to perform their obligations in a timely or competent manner may delay development and commercialization of our product candidates.

We use third parties, such as clinical research organizations, to assist in conducting our clinical trials. However, we may face delays outside of our control if these parties do not perform their obligations in a timely or competent fashion or if we are forced to change service providers. This risk is heightened for clinical trials conducted outside of the United States, where it may be more difficult to ensure that clinical trials are conducted in compliance with FDA requirements. Any third party that we hire to conduct clinical trials may also provide services to our competitors, which could compromise the performance of their obligations to us. If we experience significant delays in the progress of our clinical trials and in our plans to submit Biologics License Applications, the commercial prospects for product candidates could be harmed and our ability to generate product revenue would be delayed or prevented.

Our clinical research operations could also be negatively impacted by delays resulting from the COVID-19 pandemic. We are not able to predict the impact on the timing and costs of our planned clinical trials as a result of COVID-19.

We may not be able to obtain materials or supplies necessary to conduct clinical trials or to manufacture our product candidates in a timely manner, which could have an adverse impact on our results of operations and may delay development and commercialization of our product candidates.

We rely on third-party suppliers and manufacturers for many aspects of our manufacturing process development of our product candidates. In some cases, due to the unique manner in which our products are manufactured, we rely on single source providers of raw materials and manufacturing supplies. These third parties are independent entities subject to their own unique operational and financial risks that are outside of our control. These third parties may not perform their obligations in a timely and cost-effective manner or in compliance with applicable regulations, and they may be unable or unwilling to increase production capacity commensurate with demand for our existing or future needs. Finding alternative providers could take a significant amount of time and involve significant expense due to the specialized

nature of our product candidates. The time and effort required to qualify a new supplier could result in additional costs, diversion of resources, or reduced manufacturing yields, any of which would negatively impact our operating results. In addition, if deliveries of materials from our suppliers are interrupted for any reason, we may be unable to ship supply of our product candidates to support our clinical trials. Furthermore, factors such as the COVID-19 pandemic, the conflict between Russia and Ukraine, weather events, labor or raw material shortages and other supply chain disruptions could result in difficulties and delays in development of our product candidates, which could also have an adverse impact on our results in operations.

Risks Related to Our Intellectual Property

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.

Our commercial success will depend in part on our ability to obtain and maintain patent protection sufficient to prevent others from marketing our product candidates, as well as to defend and enforce these patents against infringement and to operate without infringing the proprietary rights of others. Protection of our product candidates from unauthorized use by third parties will depend on having valid and enforceable patents cover our product candidates or their manufacture or use, or having effective trade secret protection. If our patent applications do not result in issued patents, or if our patents are found to be invalid, we will lose the ability to exclude others from making, using or selling the inventions claimed therein. We have a limited number of patents and pending patent applications.

The patent positions of biotechnology companies can be uncertain and involve complex legal and factual questions. This is due to inconsistent application of policy and changes in policy relating to examination and enforcement of biotechnology patents to date on a global scale. The laws of some countries may not protect intellectual property rights to the same extent as the laws of countries having well-established patent systems, and those countries may lack adequate rules and procedures for defending our intellectual property rights. Also, changes in either patent laws or in interpretations of patent laws may diminish the value of our intellectual property. We are not able to guarantee that all of our patent applications will result in the issuance of patents and cannot predict the breadth of claims that may be allowed in our patent applications or in the patent applications we may license from others.

Central provisions of The Leahy-Smith America Invents Act, or the America Invents Act went into effect on September 16, 2012 and on March 16, 2013. The America Invents Act includes a number of significant changes to U.S. patent law. These changes include provisions that affect the way patent applications are being filed, prosecuted and litigated. For example, the America Invents Act enacted proceedings involving post-issuance patent review procedures, such as *inter partes* review (“IPR”), and post-grant review, that allow third parties to challenge the validity of an issued patent in front of the U.S. PTO Patent Trial and Appeal Board. Each proceeding has different eligibility criteria and different patentability challenges that can be raised. IPRs permit any person (except a party who has been litigating the patent for more than a year) to challenge the validity of the patent on the grounds that it was anticipated or made obvious by prior art. Patents covering pharmaceutical products have been subject to attack in IPRs from generic drug companies and from hedge funds. If it is within six months of the issuance of the challenged patent, a third party can petition the U.S. PTO for post-grant review, which can be based on any invalidity grounds and is not limited to prior art patents or printed publications.

In post-issuance proceedings, U.S. PTO rules and regulations generally tend to favor patent challengers over patent owners. For example, unlike in district court litigation, claims challenged in post-issuance proceedings are given their broadest reasonable meaning, which increases the chance a claim might be invalidated by prior art or lack support in the patent specification. As another example, unlike in district court litigation, there is no presumption of validity for an issued patent, and thus, a challenger’s burden to prove invalidity is by a preponderance of the evidence, as opposed to the heightened clear and convincing evidence standard. As a result of these rules and others, statistics released by the U.S. PTO show a high percentage of claims being invalidated in post-issuance proceedings. Moreover, with few exceptions, there is no standing requirement to petition the U.S. PTO for *inter partes* review or post-grant review. In other words, companies that have not been charged with infringement or that lack commercial interest in the patented subject matter can still petition the U.S. PTO for review of an issued patent. Thus, even where we have issued patents,

our rights under those patents may be challenged and ultimately not provide us with sufficient protection against competitive products or processes.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- we might not be the first to file patent applications for our inventions;
- others may independently develop similar or alternative product candidates to any of our product candidates that fall outside the scope of our patents;
- our pending patent applications may not result in issued patents;
- our issued patents may not provide a basis for commercially viable products or may not provide us with any competitive advantages or may be challenged by third parties;
- others may design around our patent claims to produce competitive products that fall outside the scope of our patents;
- we may not develop additional patentable proprietary technologies related to our product candidates; and
- we are dependent upon the diligence of our appointed agents in national jurisdictions, acting for and on our behalf, which control the prosecution of pending domestic and foreign patent applications and maintain granted domestic and foreign patents.

An issued patent does not guarantee us the right to practice the patented technology or commercialize the patented product. Third parties may have blocking patents that could be used to prevent us from commercializing our patented products and practicing our patented technology. Our issued patents and those that may be issued in the future may be challenged, invalidated or circumvented, which could limit our ability to prevent competitors from marketing the same or related product candidates or could limit the length of the term of patent protection of our product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any of our product candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent. Patent term extensions may not be available for these patents.

We rely on trade secrets and other forms of non-patent intellectual property protection. If we are unable to protect our trade secrets, other companies may be able to compete more effectively against us.

We rely on trade secrets to protect certain aspects of our technology, including our proprietary processes for manufacturing and purifying bacteriophages. Trade secrets are difficult to protect, especially in the pharmaceutical industry, where much of the information about a product must be made public during the regulatory approval process. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third party illegally obtained and is using our trade secret information is expensive and time-consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to or may not protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we are sued for infringing intellectual property rights of third parties or if we are forced to engage in an interference proceeding, it will be costly and time-consuming, and an unfavorable outcome in that litigation or interference would have a material adverse effect on our business.

Our ability to commercialize our product candidates depends on our ability to develop, manufacture, market and sell our product candidates without infringing the proprietary rights of third parties. Numerous United States and foreign patents and patent applications, which are owned by third parties, exist in the general field of anti-infective products or in fields that otherwise may relate to our product candidates. If we are shown to infringe, we could be enjoined from use or sale of the claimed invention if we are unable to prove that the patent is invalid. In addition, because patent applications can take many years to issue, there may be currently pending patent applications, unknown to us, which may later result in issued patents that our product candidates may infringe, or which may trigger an interference proceeding regarding one of our owned or licensed patents or applications. There could also be existing patents of which we are not aware that our product candidates may inadvertently infringe or which may become involved in an interference proceeding.

The biotechnology and pharmaceutical industries are characterized by the existence of a large number of patents and frequent litigation based on allegations of patent infringement. For so long as our product candidates are in clinical trials, we believe our clinical activities fall within the scope of the exemptions provided by 35 U.S.C. Section 271(e) in the United States, which exempts from patent infringement liability activities reasonably related to the development and submission of information to the FDA. As our clinical investigational drug product candidates progress toward commercialization, the possibility of a patent infringement claim against us increases. While we attempt to ensure that our active clinical investigational drugs and the methods we employ to manufacture them, as well as the methods for their use we intend to promote, do not infringe other parties' patents and other proprietary rights, we cannot be certain they do not, and competitors or other parties may assert that we infringe their proprietary rights in any event.

We may be exposed to future litigation based on claims that our product candidates, or the methods we employ to manufacture them, or the uses for which we intend to promote them, infringe the intellectual property rights of others. Our ability to manufacture and commercialize our product candidates may depend on our ability to demonstrate that the manufacturing processes we employ and the use of our product candidates do not infringe third-party patents. If third-party patents were found to cover our product candidates or their use or manufacture, we could be required to pay damages or be enjoined and therefore unable to commercialize our product candidates, unless we obtained a license. A license may not be available to us on acceptable terms, if at all.

Risks Related to Our Industry

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.

Competition in the biotechnology and pharmaceutical industries is intense and continues to increase. Some companies that are larger and have significantly more resources than we do are aggressively pursuing antibacterial development programs, including traditional therapies and therapies with novel mechanisms of action. In addition, other companies are developing phage-based products for non-therapeutic uses and may elect to use their expertise in phage development and manufacturing to try to develop products that would compete with ours.

We also face potential competition from academic institutions, government agencies and private and public research institutions engaged in the discovery and development of drugs and therapies. Many of our competitors have significantly greater financial resources and expertise in research and development, preclinical testing, conducting clinical trials, obtaining regulatory approvals, manufacturing, sales and marketing than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established pharmaceutical companies.

Our competitors may succeed in developing products that are more effective, have fewer side effects and are safer or more affordable than our product candidates, which would render our product candidates less competitive or noncompetitive. These competitors also compete with us to recruit and retain qualified scientific and management

personnel, establish clinical trial sites and patient registration for clinical trials, as well as to acquire technologies and technology licenses complementary to our programs or advantageous to our business. Moreover, competitors that are able to achieve patent protection, obtain regulatory approvals and commence commercial sales of their products before we do, and competitors that have already done so, may enjoy a significant competitive advantage.

The Generating Antibiotics Incentives Now Act is intended to provide incentives for the development of new, qualified infectious disease products. These incentives may result in more competition in the market for new antibiotics and may cause pharmaceutical and biotechnology companies with more resources than we have to shift their efforts towards the development of products that could be competitive with our product candidates.

There is a substantial risk of product liability claims in our business. If we do not obtain sufficient liability insurance, a product liability claim could result in substantial liabilities.

Our business exposes us to significant potential product liability risks that are inherent in the development, manufacturing and marketing of human therapeutic products. Regardless of merit or eventual outcome, product liability claims may result in:

- delay or failure to complete our clinical trials;
- withdrawal of clinical trial participants;
- decreased demand for our product candidates;
- injury to our reputation;
- litigation costs;
- substantial monetary awards against us; and
- diversion of management or other resources from key aspects of our operations.

If we succeed in marketing products, product liability claims could result in an FDA investigation of the safety or efficacy of our products, our manufacturing processes and facilities or our marketing programs. An FDA investigation could also potentially lead to a recall of our products or more serious enforcement actions, or limitations on the indications, for which they may be used, or suspension or withdrawal of approval.

We have product liability insurance that covers our clinical trials up to a \$10.0 million annual per claim and aggregate limit. We intend to expand our insurance coverage to include the sale of commercial products if marketing approval is obtained for our product candidates or any other compound that we may develop. However, insurance coverage is expensive and we may not be able to maintain insurance coverage at a reasonable cost or at all, and the insurance coverage that we obtain may not be adequate to cover potential claims or losses.

Even if we receive regulatory approval to market our product candidates, the market may not be receptive to our product candidates upon their commercial introduction, which would negatively affect our ability to achieve profitability.

Our product candidates may not gain market acceptance among physicians, patients, healthcare payors and the medical community. The degree of market acceptance of any approved products will depend on a number of factors, including:

- the effectiveness of the product;
- the prevalence and severity of any side effects;

- potential advantages or disadvantages over alternative treatments;
- relative convenience and ease of administration;
- the strength of marketing and distribution support;
- the price of the product, both in absolute terms and relative to alternative treatments; and
- sufficient third-party coverage or reimbursement.

If our product candidates receive regulatory approval but do not achieve an adequate level of acceptance by physicians, healthcare payors and patients, we may not generate product revenues sufficient to attain profitability.

The uncertainty associated with pharmaceutical reimbursement and related matters may adversely affect our business.

Market acceptance and sales of any one or more of our product candidates will depend on reimbursement policies and may be affected by future healthcare reform measures in the United States and in foreign jurisdictions. Government authorities and third-party payers, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish payment levels. We cannot be certain that reimbursement will be available for any of our product candidates. Also, we cannot be certain that reimbursement policies will not reduce the demand for, or the price paid for, our products. If reimbursement is not available or is available on a limited basis, we may not be able to successfully commercialize any product candidates that we develop.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (the “MMA”), changed the way Medicare covers and pays for pharmaceutical products. The legislation established Medicare Part D, which expanded Medicare coverage for outpatient prescription drug purchases by the elderly but provided authority for limiting the number of drugs that will be covered in any therapeutic class. The MMA also introduced a new reimbursement methodology based on average sales prices for physician-administered drugs.

The United States and several foreign jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could affect its ability to sell its products profitably. Among policy makers and payers in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. we expect to experience pricing pressures in connection with the sale of any products that we develop due to the trend toward managed healthcare, the increasing influence of health maintenance organizations, and additional legislative proposals.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (collectively, the “ACA”), became law in the United States, which substantially changed the way healthcare is financed by both governmental and private insurers. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, the ACA and any amendments thereto may result in downward pressure on pharmaceutical reimbursement, which could negatively affect the market acceptance of, and the price we may charge for, our products that receive regulatory approval. We also cannot predict the impact of ACA and its amendments on us as many of the ACA, as amended, requires the promulgation of detailed regulations implementing the statutory provisions, which have not yet been fully implemented.

Risks Related to Our Common Stock

Innoviva may exert a substantial influence on actions requiring stockholder vote, potentially in a manner that you do not support.

Upon closing of both the first and second tranche of the February 2022 Private Placement, Innoviva owned approximately 70% of our outstanding shares and 19,364,647 warrants to purchase shares of our common stock. If Innoviva were to exercise the warrants held by them, they would hold approximately 80.1% of our issued and outstanding shares of common stock. In addition, on January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. The Loan is mandatorily convertible into our common stock upon a qualified financing event, as defined in the Credit Agreement. The Loan is also convertible into our common stock at any time prior to maturity at the option of Innoviva at a specified conversion price. Innoviva’s large ownership stake may allow it to exert a substantial influence on actions requiring a stockholder vote, potentially in a manner that you do not support, including amendments to our articles of incorporation, adoption of measures that could delay or prevent a change in control or impede a merger, takeover, or other business combination involving us, and approval of other major corporate transactions. In addition, Innoviva’s stock ownership may discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of us, which in turn could reduce our stock price or prevent our stockholders from realizing a premium over our stock price. Accordingly, our stockholders other than Innoviva may be unable to influence management and exercise control over our business.

The price of our common stock has been and may continue to be volatile.

As of December 31, 2022, we had outstanding common warrants to purchase an aggregate of 20,549,338 shares of our common stock at a weighted-average exercise price of \$3.71 per share. As of December 31, 2022, warrants included warrants issued to Innoviva during the January 2021 Private Placement which have an exercise price of \$3.25, as well as warrants issued to Innoviva during the 2020 Private Placement which have an exercise price of \$2.87 per share. We also have outstanding options to exercise 3,352,803 shares of our common stock at a weighted-average exercise price of \$5.32 per share. Although we cannot determine when these warrants or options will ultimately be exercised, it is reasonable to assume that such warrants and options will be exercised only if the exercise price is below the market price of our common stock. To the extent any of our outstanding warrants or options are exercised, additional shares of our common stock will be issued that will generally be eligible for resale in the public market (subject to limitations under Rule 144 under the Securities Act for certain of our warrants and with respect to shares held by our affiliates), which will result in dilution to our security holders. The issuance of additional securities could also have an adverse effect on the market price of our common stock.

Conversion of our convertible notes will dilute the ownership interest of existing stockholders, or may otherwise depress the market price of our common stock.

On January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva SO, a wholly owned subsidiary of Innoviva, Inc., a principal stockholder of us, pursuant to which Innoviva provided us with the Loan described in more detail above. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by our domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of our assets and the subsidiary guarantors.

The Credit Agreement provides that if a Qualified Financing, as defined in the Credit Agreement, occurs, the outstanding principal amount of, and all accrued and unpaid interest on, the Loan shall be converted into shares of our common stock at a price per share equal to a 15.0% discount to the lowest price per share for our common stock paid by investors in a Qualified Financing (which price paid by investors in a Qualified Financing may not be less than a 15.0% discount to the closing price of our common stock immediately prior to the consummation of a Qualified Financing event). The Credit Agreement also requires us to file a registration statement for the resale of all securities issued to the lender in connection with any conversion under the Credit Agreement. After the such registration statement has been declared effective by the SEC, any outstanding Loan amount, including all accrued and unpaid interest thereon, may be converted at the lender’s option, into shares of our common stock at a price per share equal to the greater of book value

or market value per share of our common stock on the date immediately preceding the effective date of the Credit Agreement, which is \$1.52 (as may be appropriately adjusted for any stock split, combination or similar act).

The conversion of some or all of the Loan will dilute the ownership interests of existing stockholders. Any sales in the public market of the shares of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the notes may encourage short selling by market participants because the anticipated conversion of the Loan into shares of our common stock could depress the market price of our common stock.

We have never paid dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be our stockholders' sole source of gain for the foreseeable future.

General Risk Factors

Our business and operations might be adversely affected by security breaches, including any cybersecurity incidents.

We depend on the efficient and uninterrupted operation of our computer and communications systems and those of third parties with which we contract, which we use for, among other things, sensitive company data, including our financial data, intellectual property and other proprietary business information.

While certain of our operations have business continuity and disaster recovery plans and other security measures intended to prevent and minimize the impact of IT-related interruptions, our IT infrastructure and the IT infrastructure of our consultants, contractors and vendors are vulnerable to damage from cyberattacks, ransomware and other malware incidents, computer viruses, unauthorized access, electrical failures and natural disasters, terrorism, war or other catastrophic events. We could experience failures in our information systems and computer servers, which could result in an interruption of our normal business operations and require substantial expenditure of financial and administrative resources to remedy. System failures, accidents or security breaches can cause interruptions in our operations and can result in a material disruption of our clinical and commercialization activities, targeted phage therapies, bacteriophage product candidates and other business operations. The loss of data from completed or future studies or clinical trials could result in delays in our research, development or regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the development of our product candidates could be delayed or otherwise adversely affected.

Even though we believe we carry commercially reasonable business interruption and liability insurance, we might suffer losses as a result of business interruptions that exceed the coverage available under our insurance policies or for which we do not have coverage. For example, we are not insured against terrorist attacks or cyberattacks. Any natural disaster or catastrophic event could have a significant negative impact on our operations and financial results. Moreover, any such event could delay the development of our product candidates.

In the ordinary course of our business, we may collect and store sensitive data, including legally protected health information, personally identifiable information, intellectual property, and proprietary business information. We face risks relative to protecting this critical information, including loss of access risk, inappropriate disclosure risk, inappropriate modification risk and the risk of being unable to adequately monitor our controls.

The U.S. Office of Civil Rights in the Department of Health and Human Services enforces the HIPAA privacy and security rules and may impose penalties for failure to comply with requirements of HIPAA. Penalties will vary significantly depending on factors such as whether failure to comply was due to willful neglect. These penalties include civil monetary penalties of \$100 to \$50,000 per violation, up to an annual cap of \$1,500,000 for identical violations. A

person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face a criminal penalty of up to \$50,000 per violation and up to one-year imprisonment. The criminal penalties increase to \$100,000 per violation and up to five-years imprisonment if the wrongful conduct involves false pretenses, and to \$250,000 per violation and up to 10-years imprisonment if the wrongful conduct involves the intent to sell, transfer, or use identifiable health information for commercial advantage, personal gain, or malicious harm. The U.S. Department of Justice is responsible for criminal prosecutions under HIPAA. Furthermore, in the event of a breach as defined by HIPAA, there are reporting requirements to the U.S. Office of Civil Rights under the HIPAA regulations as well as to affected individuals, and there may also be additional reporting requirements to other state and federal regulators, including the Federal Trade Commission, and to the media. Issuing such notifications can be costly, time and resource intensive, and can generate significant negative publicity. Breaches of HIPAA may also constitute contractual violations that could lead to contractual damages or terminations.

In addition, the interpretation and application of consumer, health-related and data protection laws in the United States, the European Union, and elsewhere are often uncertain, contradictory and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. If so, this could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. In addition, these privacy regulations vary between states, may differ from country to country, and may vary based on whether testing is performed in the United States or in the local country. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business. For example, we may be subject to privacy laws and regulations such as the European Union's General Data Privacy Regulation ("GDPR") and the California Consumer Privacy Act ("CCPA"). These regulations mandate that companies satisfy requirements regarding the handling of personal and sensitive data, including its use, protection, and the ability of persons whose data is stored to correct or delete such data about themselves. Failure to comply with GDPR requirements could result in penalties of up to four percent of worldwide revenue. The GDPR, CCPA, and other similar laws and regulations, as well as any associated inquiries or investigations or any other government actions, may be costly to comply with, increase our operating costs, require significant management time and attention, and subject us to remedies that may harm our business, including fines, negative publicity, or demands or orders that we modify or cease existing business practices.

Interruptions in the availability of server systems or communications with Internet or cloud based services, or failure to maintain the security, confidentiality, accessibility or integrity of data stored on such systems, could harm our business.

We rely upon a variety of Internet service providers, third-party hosting facilities and cloud computing platform providers to support our business. Failure to maintain the security, confidentiality, accessibility or integrity of data stored on such systems could damage our reputation in the market, cause us to lose revenue or market share, increase our service costs, cause us to incur substantial costs, subject us to liability for damages and/or fines and divert our resources from other tasks, any one of which could materially adversely affect our business, financial condition, results of operations and prospects. Any damage to, or failure of, such systems, or communications to and between such systems, could result in interruptions in our operations. If our security measures or those of our third-party data center hosting facilities, cloud computing platform providers, or third-party service partners, are breached, and unauthorized access is obtained to our data or our information technology systems, we may incur significant legal and financial exposure and liabilities.

We do not have control over the operations of the facilities of our cloud service providers and our third-party providers may be vulnerable to damage or interruption from natural disasters, cybersecurity attacks, terrorist attacks, power outages and similar events or acts of misconduct. In addition, any changes in our cloud service providers' service levels may adversely affect our ability to meet our requirements and operate our business.

If securities or industry analysts do not publish research or publish unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. We currently have three securities analysts and may never obtain additional

research coverage by other securities and industry analysts. If no additional securities or industry analysts commence coverage of our company, the trading price for our stock could be negatively impacted. If we obtain additional securities or industry analyst coverage and if one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price and trading volume to decline.

Sales of a substantial number of shares of our common stock in the public market by our existing stockholders could cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

Future sales and issuances of our common stock or rights to purchase common stock by us, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to decline.

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 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 or the perception that such sales could occur.

We expect that significant additional capital will be needed in the future to continue our planned operations, including conducting clinical trials, commercialization efforts, expanded research and development activities and costs associated with operating as a public company. To the extent we raise additional capital by issuing equity or convertible securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Pursuant to our 2016 Equity Incentive Plan (the “2016 Plan”), our management is authorized to grant stock options and other equity-based awards to our employees, directors and consultants. The number of shares available for future grant under the 2016 Plan will automatically increase on January 1st of each year by up to 5% of all shares of our capital stock outstanding as of December 31st of the preceding calendar year, subject to the ability of our Board of Directors to take action to reduce the size of the increase in any given year. In addition, we may grant or provide for the grant of rights to purchase shares of our common stock pursuant to our 2016 Employee Stock Purchase Plan (“ESPP”). The number of shares of our common stock reserved for issuance under the ESPP will automatically increase on January 1st of each calendar year by the lesser of 1% of the total number of shares of our common stock outstanding on December 31st of the preceding calendar year and 30,000 shares, subject to the ability of our Board of Directors to take action to reduce the size of the increase in any given year. Currently, we plan to register the increased number of shares available for issuance under the 2016 Plan and ESPP each year. Increases in the number of shares available for future grant or purchase may result in additional dilution, which could cause our stock price to decline.

Provisions of Washington law and our current articles of incorporation and bylaws may discourage another company from acquiring us and may prevent attempts by our stockholders to replace or remove our current management.

Provisions of Washington law and our current articles of incorporation and bylaws may discourage, delay or prevent a merger or acquisition that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. In addition, these provisions may frustrate or prevent any attempts by our

stockholders to replace or remove our current management by making it more difficult for stockholders to replace or remove our Board of Directors. These provisions include:

- authorizing the issuance of “blank check” preferred stock without any need for action by stockholders;
- requiring supermajority stockholder voting to effect certain amendments to our articles of incorporation and bylaws; and
- establishing advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings.

In addition, because we are incorporated in Washington, we are governed by the provisions of Chapter 23B.19 of the Washington Business Corporation Act, which, among other things, restricts the ability of stockholders owning 10% or more of our outstanding voting stock from merging or combining with us. These provisions could discourage potential acquisition attempts and could reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price being lower than it would without these provisions.

Although we believe these provisions collectively provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer may be considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it difficult for stockholders to replace members of our Board of Directors, which is responsible for appointing the members of our management.

Foreign governments tend to impose strict price controls, which may adversely affect our future profitability.

In some foreign countries, particularly in the European Union, prescription drug pricing is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our profitability will be negatively affected.

We may incur significant costs complying with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.

Our research and development activities use biological and hazardous materials that are dangerous to human health and safety or the environment. We are subject to a variety of federal, state and local laws and regulations governing the use, generation, manufacture, storage, handling and disposal of these materials and wastes resulting from these materials. We are also subject to regulation by the Occupational Safety and Health Administration (“OSHA”), state and federal environmental protection agencies and to regulation under the Toxic Substances Control Act. OSHA, state governments or federal Environmental Protection Agency, may adopt regulations that may affect our research and development programs. We are unable to predict whether any agency will adopt any regulations that could have a material adverse effect on our operations. We have incurred, and will continue to incur, capital and operating expenditures and other costs in the ordinary course of our business in complying with these laws and regulations.

Although we believe our safety procedures for handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot entirely eliminate the risk of accidental injury or contamination from the use, storage, handling or disposal of hazardous materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could significantly exceed our insurance coverage.

Taxing authorities could reallocate our taxable income among our subsidiaries, which could increase our overall tax liability.

We are organized in the United States, and we currently have subsidiaries in the United Kingdom and Australia. If we succeed in growing our business, we expect to conduct increased operations through our subsidiaries in various tax jurisdictions pursuant to transfer pricing arrangements between us and our subsidiaries. If two or more affiliated companies are located in different countries, the tax laws or regulations of each country generally will require that transfer prices be the same as those between unrelated companies dealing at arm's length and that appropriate documentation is maintained to support the transfer prices. While we believe that we operate in compliance with applicable transfer pricing laws and intend to continue to do so, our transfer pricing procedures are not binding on applicable tax authorities.

If tax authorities in any of these countries were to successfully challenge our transfer prices as not reflecting arm's length transactions, they could require us to adjust our transfer prices and thereby reallocate our income to reflect these revised transfer prices, which could result in a higher tax liability to us. In addition, if the country from which the income is reallocated does not agree with the reallocation, both countries could tax the same income, resulting in double taxation. If tax authorities were to allocate income to a higher tax jurisdiction, subject our income to double taxation or assess interest and penalties, it would increase our consolidated tax liability, which could adversely affect our financial condition, results of operations and cash flows.

Increased scrutiny of our environmental, social or governance responsibilities will likely result in additional costs and risks and may adversely impact our reputation, employee retention and willingness of customers and suppliers to do business with us.

There is an increasing focus from certain customers, consumers, employees and other stakeholders concerning environmental, social and governance ("ESG") matters, including corporate citizenship and sustainability. Additionally, public interest and legislative pressure related to public companies' ESG practices continues to grow. If our ESG practices fail to meet regulatory requirements or stakeholders' evolving expectations and standards for responsible corporate citizenship in areas including environmental stewardship, support for local communities, Board of Director and employee diversity, human capital management, employee health and safety practices, corporate governance and transparency and employing ESG strategies in our operations, our brand, reputation and employee retention may be negatively impacted, and customers and suppliers may be unwilling to do business with us.

In addition, aligning our ESG practices with industry standards will likely require us to expand our disclosures in these areas. We also expect to incur additional costs and require additional resources to monitor, report and comply with our various ESG practices. The standards for tracking and reporting on ESG matters are relatively new, have not been harmonized and continue to evolve. The disclosure frameworks we choose to align with, if any, may change from time-to-time and may result in a lack of consistent or meaningful comparative data from period to period. Ensuring there are systems and processes in place to comply with various ESG tracking and reporting obligations will require management time and expense. In addition, our processes and controls may not always comply with evolving standards for identifying, measuring and reporting ESG metrics, our interpretation of reporting standards may differ from those of others and such standards may change over time, any of which could result in significant revisions to our goals or reported progress in achieving such goals.

If we fail to adopt ESG standards or practices as quickly as stakeholders desire, fail, or be perceived to fail, in our achievement of such initiatives or goals, or fail in fully and accurately reporting our progress on such initiatives and goals, our reputation, business, financial performance and growth may be adversely impacted. In addition, we could be criticized for the scope of such initiatives or goals or perceived as not acting responsibly in connection with these matters. Our business could be negatively impacted by such matters. Any such matters, or related corporate citizenship and sustainability matters, could have a material adverse effect on our business.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

Our corporate headquarters are located in Marina del Rey, California, with an address of 4503 Glencoe Avenue, Marina del Rey, CA 90292, where we currently lease 35,500 square feet of laboratory and office space. The lease expires on December 31, 2031. The facility includes 19,500 square feet of BSL2 laboratory space dedicated to phage product development. The facility includes approximately 3,000 square feet of cGMP laboratory space, designed to produce clinical quantities of our phage product candidates for human trials and to perform in-house Quality Control (“QC”) testing.

On October 28, 2021, we entered into a lease for office and research and development space under a non-cancellable lease in Los Angeles, CA (the “2021 Lease”). The 2021 Lease payment start date was May 1, 2022, and the total lease term is for 16 years and runs through 2038. Monthly rent for 2022 and 2023 will be fully or partially abated while we and the lessor complete planned tenant improvements to the facility, expected to be completed in the second half of 2023. Base monthly rent will be approximately \$0.25 million in 2024. We are entitled to receive an allowance for tenant improvements of up to \$7.3 million.

In addition, we lease a 5,000 square foot facility located in Sydney, Australia, which includes 4,000 square feet of laboratory space providing capabilities to support phage product development and manufacturing process development. The facility is also set up to provide microbiological support of clinical trials.

We occupy approximately 1,000 square feet of leased office space pursuant to a month-to-month sublease, located at 3579 Valley Centre Drive, Suite 100, San Diego, California 92130.

We believe that our existing office and laboratory space is sufficient to meet our needs for the foreseeable future and that suitable additional space will be available when and if needed.

Item 3. LEGAL PROCEEDINGS

From time to time, we may be involved in disputes, including litigation, relating to claims arising out of operations in the normal course of business. Any of these claims could subject us to costly legal expenses and, while management generally believes that there is adequate insurance to cover many different types of liabilities, our insurance carriers may deny coverage or policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on the consolidated results of operations and financial position. Additionally, any such claims, whether or not successful, could damage our reputation and business. We are currently not a party to any legal proceedings, the adverse outcome of which, in management’s opinion, individually or in the aggregate, would have a material adverse effect on our consolidated results of operations or financial position.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

Item 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is traded on the NYSE American under the symbol “ARMP.”

Holders of Common Stock

As of March 13, 2023, there were 90 holders of record of our common stock. As of such date, there were 36,144,706 shares of our common stock outstanding.

Dividends

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects and other factors our board of directors may deem relevant.

Recent Sales of Unregistered Securities

2021 Private Placements

On October 28, 2021, we entered into a securities purchase agreement (the “October 2021 Securities Purchase Agreement”) with the Cystic Fibrosis Foundation (“CFF”), a Delaware corporation, our partner for the lead Phase 1b/2a clinical development program, and Innoviva Strategic Opportunities LLC (“Innoviva SO”), a wholly-owned subsidiary of Innoviva, Inc. (collectively, “Innoviva”), for the private placement (the “October 2021 Private Placement”) of newly issued shares of our common stock. Pursuant to the October 2021 Securities Purchase Agreement, we issued and sold 909,091 shares to CFF and 1,212,122 shares to Innoviva, each at a per share price of \$3.30. We received aggregate gross proceeds from the October 2021 Private Placements of approximately \$7.0 million, before deducting transaction expenses.

On January 26, 2021, we entered into a securities purchase agreement (the “January 2021 Securities Purchase Agreement”) with Innoviva SO, pursuant to which we agreed to issue and sell to Innoviva SO, in a private placement (the “January 2021 Private Placement”), 6,153,847 newly issued shares of our common stock and warrants to purchase 6,153,847 shares of common stock, with an exercise price per share of \$3.25. Each share of common stock was sold together with one common warrant granting the warrant holder the right to purchase an additional share of common stock at \$3.25 per share.

See the section entitled “Business—Recent Developments” for a description of the October 2021 and January 2021 Private Placement, which is incorporated by reference herein.

We have relied on an exemption from registration under Section 4(a)(2) of the Securities Act of 1933, as amended (the “Securities Act”), for the October 2021 and January 2021 Private Placements.

2022 Private Placements

On February 9, 2022, we entered into a securities purchase agreement to sell our common stock and warrants to Innoviva, our largest stockholder. The gross proceeds from the transaction amounted to \$45 million, before deducting estimated offering expenses.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva purchased 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases occurred in two tranches. On February 9, 2022, Innoviva purchased approximately 3,614,792 shares of common stock and warrants to purchase approximately 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

As part of the first closing, we entered into an amended and restated investor rights agreement (the “A&R IRA”), which amended and restated in its entirety that certain Investor Rights Agreement, dated February 12, 2020, as amended and restated as of January 26, 2021, by and among Innoviva, its affiliates and us. Pursuant to the A&R IRA, for so long

as Innoviva and its affiliates hold at least 12.5% of the outstanding shares of our common stock on a fully-diluted basis, Innoviva and its affiliates shall have the right to designate two directors to the board of directors of the Company (the “Board”) and for so long as Innoviva and its affiliates hold at least 8%, but less than 12.5%, of the outstanding shares of common stock of the Company on a fully-diluted basis, Innoviva and its affiliates shall have the right to designate one director to the Board, subject to certain conditions and qualifications set forth in the A&R IRA. The A&R IRA also provides Innoviva and its affiliates with certain subscription rights in the event of any new issuances.

As part of the First Closing, we also entered into a registration rights agreement (the “Registration Rights Agreement”) with Innoviva. Pursuant to the Registration Rights Agreement, we were obligated to a registration statement on Form S-1 or Form S-3 (the “Shelf Registration Statement”) covering the resale of the securities issued and sold pursuant to the securities purchase agreement with the U.S. Securities and Exchange Commission (the “SEC”). We filed the Shelf Registration Statement on May 16, 2022 and it was declared effective by the SEC on May 31, 2022.

We also entered into an amended and restated voting agreement with Innoviva, (the “Voting Agreement”), which amended and restated in its entirety that certain Voting Agreement dated January 26, 2021, as amended and restated as of October 28, 2021, pursuant to which Innoviva and its affiliates agreed not to vote or take any action by written consent with respect to shares of our common stock held by Innoviva or any of its subsidiaries which represent, in the aggregate, more than 49.5% of the total number of shares of common stock voting with respect to certain matters (such shares, the “Excess Shares”) related to the election of directors to the Board of Directors, removal of directors from the Board of Directors or amendment of our bylaws to reduce the maximum number of directors or set the number of directors who may serve on the Board of Directors (“Board Matters”) presented at any meeting of the stockholders (or any adjournment or postponement thereof) or for their action by written consent, in each case, unless the Board of Directors authorizes Innoviva or its affiliates to vote such Excess Shares with respect to Board Matters.

Item 6. [Reserved]

None.

Item 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the consolidated financial statements and the related notes contained elsewhere in this Annual Report. Some of the information contained in this discussion and analysis are set forth elsewhere in this Annual Report, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. See “Special Note Regarding Forward-Looking Statements.” Our actual results may differ substantially from those referred to herein due to a number of factors, including but not limited to risks described in the section entitled “Risk Factors” and elsewhere in this Annual Report.

On May 9, 2019, our predecessor company, C3J Therapeutics, Inc. (“C3J”) completed a reverse merger with AmpliPhi Biosciences Corporation, a bacteriophage development stage company (“AmpliPhi”), where Ceres Merger Sub, Inc., a wholly-owned subsidiary of AmpliPhi, merged with and into C3J (the “Merger”). Immediately prior to the Merger, AmpliPhi changed its name to Armata Pharmaceuticals, Inc.

Our common stock is traded on the NYSE American exchange under the symbol “ARMP.” We are headquartered in Marina del Rey, CA, in a 35,000 square-foot research and development facility built for product development with capabilities spanning from bench to clinic. In addition to microbiology, synthetic biology, formulation, chemistry and analytical laboratories, the facility is equipped with two licensed current good manufacturing practice (“cGMP”) drug manufacturing suites enabling the production, testing and release of clinical material.

Statements contained in this Annual Report that are not statements of historical fact are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, without limitation, statements concerning product development plans, commercialization of our products, the

expected market opportunity for our products, the use of bacteriophages and synthetic phages to kill bacterial pathogens, having resources sufficient to fund our operations into the third quarter of 2023, future funding sources, general and administrative expenses, clinical trial and other research and development expenses, costs of manufacturing, costs relating to our intellectual property, capital expenditures, the expected benefits of our targeted phage therapies strategy, the potential market for our products, tax credits and carry-forwards, and litigation-related matters. Words such as “believe,” “anticipate,” “plan,” “expect,” “intend,” “will,” “goal,” “potential” and similar expressions are intended to identify forward-looking statements, though not all forward-looking statements necessarily contain these identifying words. These statements are subject to risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below under Item 1A, “Risk Factors” and elsewhere in this Annual Report on Form 10-K. These forward-looking statements speak only as of the date on which they were made, and we undertake no obligation to update any forward-looking statements.

Overview

We are a clinical-stage biotechnology company focused on the development of pathogen-specific bacteriophage therapeutics for the treatment of antibiotic-resistant and difficult-to-treat bacterial infections using our proprietary bacteriophage-based technology. Bacteriophages or “phages” have a powerful and highly differentiated mechanism of action that enables binding to and killing specific bacteria, in contrast to traditional broad-spectrum antibiotics. We believe that phages represent a promising means to treat bacterial infections, especially those that have developed resistance to current standard of care therapies, including the so-called multidrug-resistant or “superbug” strains of bacteria. We are a leading developer of phage therapeutics and are uniquely positioned to address the growing worldwide threat of antibiotic-resistant bacterial infections.

We are combining our proprietary approach and expertise in identifying, characterizing and developing both naturally-occurring and engineered (synthetic) bacteriophages with our proprietary phage-specific current good manufacturing practice regulations compliant (“cGMP”) manufacturing capabilities to advance a broad pipeline of high-quality bacteriophage product candidates.

We are developing and advancing our lead clinical phage candidate for *Pseudomonas aeruginosa* (“*P. aeruginosa*”). On October 14, 2020, we received the approval to proceed from the FDA for our IND application for AP-PA02. In the first quarter of 2023, Armata announced positive topline results from the completed “SWARM-*P.a.*” study – a Phase 1b/2a, multicenter, double-blind, randomized, placebo-controlled, single ascending dose (“SAD”) and multiple ascending dose (“MAD”) clinical trial to evaluate the safety and tolerability of inhaled AP-PA02 in subjects with cystic fibrosis (“CF”) and chronic pulmonary *P. aeruginosa* infection. Data indicate that AP-PA02 was well-tolerated with a treatment emergent adverse event profile similar to placebo. Pharmacokinetics (PK) findings confirm that AP-PA02 can be effectively delivered to the lungs through nebulization with minimal systemic exposure, with single ascending doses and multiple ascending doses resulting in a proportional increase in exposure as measured in induced sputum and exposure achievement relatively consistent across patient subjects. Additionally, bacterial levels of *P. aeruginosa* in the sputum measured at several timepoints suggest improvement in bacterial load reduction for subjects treated with AP-PA02 at the end of treatment as compared to placebo after ten days of dosing. This study is supported by the Cystic Fibrosis Foundation (“CFF”), which granted Armata a Therapeutics Development Award of up to \$5.0 million.

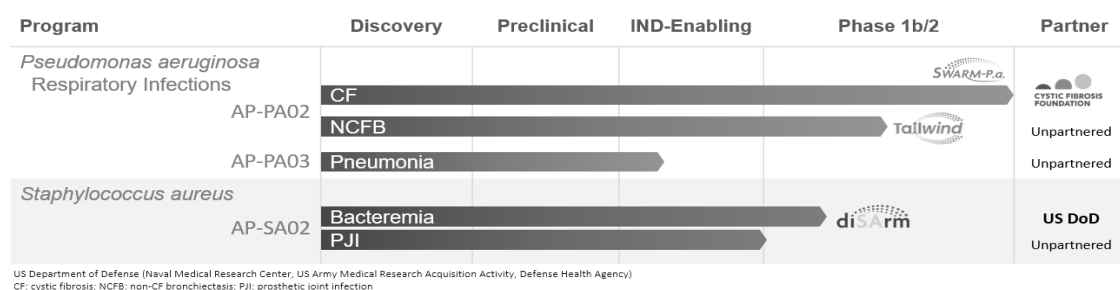
We are also developing a phage product candidate for *Staphylococcus aureus* (“*S. aureus*”) for the treatment of *S. aureus* bacteremia, AP-SA02. On June 15, 2020, we entered into an agreement (the “MTEC Agreement”) with the Medical Technology Enterprise Consortium (“MTEC”), pursuant to which we expect to receive a \$15.0 million grant and entered into a three-year program administered by the U.S Department of Defense (the “DoD”) through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024. We expect to use the grant to partially fund a Phase 1/2, multi-center, randomized, double-blind, placebo-controlled dose escalation study that will assess the safety, tolerability, and efficacy of our phage-based candidate, AP-SA02, for the treatment of adults with *S. aureus* bacteremia. On November 17, 2021, Armata announced that it had received from the FDA the approval to proceed for our Investigational New Drug application for AP-SA02. We plan to continue to advance the “diSArm” study provided that the impacts of COVID-19 do not impede our ability to enroll subjects in this clinical trial.

On February 22, 2022, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-PA02, in a second indication, NCFB. The Company initiated a Phase 2 trial (“Tailwind”) in NCFB in 2022 and reported first patient dosing in the first quarter of 2023. The “Tailwind” study is a Phase 2, multicenter, double-blind, randomized, placebo-controlled study to evaluate the safety, phage kinetics, and efficacy of inhaled AP-PA02 phage therapeutic in subjects with NCFB and chronic pulmonary *Pseudomonas aeruginosa* infection.

On August 1, 2022, Armata announced that it had received from the FDA the approval to proceed for our IND application for AP-SA02, in a second indication, PJI. The Company plans to initiate a Phase 1b/2a trial in 2023, which will assess the safety and tolerability of intravenous and intra-articular AP-SA02 as an adjunct to standard of care antibiotics in adults undergoing debridement, antibiotics, and implant retention for the treatment of periprosthetic joint infections caused by *S. aureus*.

We are committed to conducting randomized controlled clinical trials required for FDA approval in order to move toward the commercialization of alternatives to traditional antibiotics and provide a potential method of treating patients suffering from drug-resistant and difficult-to-treat bacterial infections.

The following chart summarizes the status of our phage product candidate development programs and partners.



We have generally incurred net losses since our inception and our operations to date have been primarily limited to research and development and raising capital. As of December 31, 2022, we had an accumulated deficit of \$239.8 million. We anticipate that a substantial portion of our capital resources and efforts in the foreseeable future will be focused on completing the development and seeking to obtain regulatory approval of our product candidates.

We currently expect to use our existing cash and cash equivalents for the continued research and development of our product candidates and for working capital and other general corporate purposes. We expect to continue to incur significant and increasing operating losses at least for the next several years. We do not expect to generate product revenue unless and until we successfully complete development and obtain marketing approval for at least one of our product candidates.

We may also use a portion of our existing cash and cash equivalents for the potential acquisition of, or investment in, product candidates, technologies, formulations or companies that complement our business, although we have no current understandings, commitments or agreements to do so. Our existing cash and cash equivalents will not be sufficient to enable us to complete all necessary development of any potential product candidates. Accordingly, we will be required to obtain further funding through one or more other public or private equity offerings, debt financings, collaboration, strategic financing, grants or government contract awards, licensing arrangements or other sources. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and potential disruptions to, and volatility in, financial markets in the United States and worldwide. Adequate additional funding may not be available to us on acceptable terms, or at all. If we are unable to raise capital 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 assets, 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 and result in a loss of investment by our stockholders.

Impact of COVID-19

The healthcare challenge and other impacts surrounding the COVID-19 pandemic that emerged in late 2019 have presented significant business uncertainty and had a dramatic impact on businesses globally, including ours. As the COVID-19 pandemic reaches an endemic state, the extent to which it may affect our clinical trials, business operations, financial condition and results of operations remains dependent on future developments, which are highly uncertain and cannot be predicted at this time. Although COVID-19 infection rates and severity have decreased recently, the occurrence, spread, severity and duration of any new outbreaks or resurgences, including the emergence and spread of new variants of COVID-19, actions taken to contain the resurgences or variants, and economic repercussions of the virus remain uncertain. We continue to evaluate the nature and extent to which COVID-19 may impact our business and operations.

Recent Events

2023 Credit Agreement

On January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva Strategic Opportunities LLC (“Innoviva SO”), a wholly owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, “Innoviva”), a principal stockholder of us. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by our domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of our assets and the subsidiary guarantors.

The Credit Agreement provides that if a Qualified Financing, as defined in the Credit Agreement, occurs, the outstanding principal amount of, and all accrued and unpaid interest on, the Loan shall be converted into shares of our common stock, at a price per share equal to a 15.0% discount to the lowest price per share for our common stock paid by investors in a Qualified Financing (which price paid by investors in a Qualified Financing may not be less than a 15.0% discount to the closing price of our common stock immediately prior to the consummation of a Qualified Financing event). The Credit Agreement also requires us to file a registration statement (the “Registration Statement”) for the resale of all securities issued to the lender in connection with any conversion under the Credit Agreement. After the Registration Statement has been declared effective by the U.S. Securities and Exchange Commission, any outstanding Loan amount, including all accrued and unpaid interest thereon, may be converted at the lender’s option, into shares of our common stock at a price per share equal to the greater of book value or market value per share of common stock on the date immediately preceding the effective date of the Credit Agreement, which is \$1.52 (as may be appropriately adjusted for any stock split, combination or similar act).

PJI IND Approval

On August 1, 2022, we announced that the FDA has cleared Armata’s IND application for AP-SA02, in a second indication, PJI. The Company plans to initiate a Phase 1b/2 trial in PJI in 2023.

NCFB IND Approval

On February 22, 2022, we announced that the FDA has cleared Armata’s IND application to initiate a clinical trial of its optimized lead therapeutic candidate, AP-PA02, in a second indication, NCFB. We initiated a Phase 2 trial in NCFB in 2022 and announced first patient dosing in the first quarter of 2023.

February 2022 Private Placement

On February 9, 2022, we entered into a securities purchase agreement to sell our common stock and warrants to Innoviva SO, a wholly-owned subsidiary of Innoviva, Inc., a principal stockholder of us.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases were completed in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

Executive Transition

On June 30, 2022, Steve R. Martin retired as our Chief Financial Officer and Senior Vice President (and Principal Financial and Accounting Officer). Mr. Martin has agreed to continue his employment with us as an advisor to his successor in the Principal Financial and Accounting Officer role from July 1, 2022 through December 31, 2022.

On March 25, 2022, the Board of Directors appointed Erin Butler to serve as (i) Vice President of Finance and Administration of the Company, effective April 1, 2022, and (ii) Principal Financial and Accounting Officer of the Company, effective July 1, 2022.

Selected Financial Data

The selected consolidated financial data set forth below as of December 31, 2022 and 2021, and for the years ended December 31, 2022 and 2021, are derived from our audited consolidated financial statements included elsewhere in this report. This information should be read in conjunction with those consolidated financial statements, the notes thereto, and with “*Management’s Discussion and Analysis of Financial Condition and Results of Operations.*”

	For the year ended December 31,	
	2022	2021
Statement of Operations Data:		
Grant revenue	\$ 5,508,000	\$ 4,474,000
Loss from operations	\$ (36,946,000)	\$ (23,822,000)
Net loss	\$ (36,917,000)	\$ (23,155,000)
Net loss per share, basic and diluted	\$ (1.08)	\$ (0.96)
Shares used in computing net loss per share, basic and diluted	34,294,124	24,104,146
	As of December 31,	
	2022	2021
Balance Sheet Data:		
Cash and cash equivalents	\$ 14,852,000	\$ 10,288,000
Working capital	\$ 2,174,000	\$ 10,181,000
Total assets	\$ 95,834,000	\$ 69,768,000
Total liabilities	\$ 59,754,000	\$ 44,371,000
Accumulated deficit	\$ (239,774,000)	\$ (202,857,000)
Total stockholders’ equity	\$ 36,080,000	\$ 25,397,000

Results of Operations

Comparison of year ended December 31, 2022 and 2021

Grant Revenue

We recognized \$5.5 million and \$4.5 million of grant revenue during the year ended December 31, 2022 and 2021, respectively, which represents the MTEC’s share of the costs incurred for the Company’s AP-SA02 program for the treatment of *Staphylococcus aureus* bacteremia infections.

Research and Development

Research and development expenses for the year ended December 31, 2022 and 2021 were \$35.0 million and \$20.0 million, respectively. The net increase of \$15.0 million was primarily related to an increase of \$7.6 million related to increased clinical trial activities and laboratory supplies expenses, \$1.8 million in personnel costs, and \$3.2 million in lease expenses, and a \$2.2 million reduction in credits to research and development expenses related to CFF awards and Australian tax credits.

General and Administrative

General and administrative expenses for the year ended December 31, 2022 were \$7.4 million compared with \$8.3 million for the same period in 2021. The net decrease of \$0.9 million was primarily related to a decrease of \$1.2 million of salary and personnel related expenses, offset by an increase of \$0.4 million of lease expenses.

Gain upon Extinguishment of Paycheck Protection Program Loan

In April 2020, we received loan proceeds of \$717,000 (“PPP Loan”) under the Paycheck Protection Program (“PPP”). The PPP, established as part of the Coronavirus Aid, Relief and Economic Security Act, provides for loans to qualifying businesses for amounts up to 2.5 times the average monthly payroll expenses of the qualifying business, calculated as provided under the PPP. The PPP provides a mechanism for forgiveness of up to the full amount borrowed, and in July 2021, we received notification of forgiveness of the full loan amount and associated interest from the Small Business Administration. We recorded a gain of \$0.7 million from the PPP Loan extinguishment in the statement of operations during the year ended December 31, 2021.

Other Income (Expense)

For the year ended December 31, 2022 and 2021, we recorded noncash interest expense of \$0 and \$0.1 million, respectively, as a result of interest accretion on the time-based cash payments due in connection with the asset acquisition transaction with Synthetic Genomics, Inc. (“SGI”).

Income Taxes

There was no income tax expense or benefit for the year ended December 31, 2022 or December 31, 2021.

Operating Activities

Net cash used in operating activities for the year ended December 31, 2022 was \$32.5 million, as compared to \$23.6 million for the year ended December 31, 2021. The increase of \$8.9 million was due to a \$13.8 million increase in net loss, \$1.2 million net increase in non-cash adjustments to cash used in operating activities, offset by a \$3.7 million net decrease in operating assets and liabilities.

Investing Activities

Net cash used in investing activities of \$2.2 million and \$1.3 million for the years ended December 31, 2022 and 2021, respectively, was related to purchases of property and equipment.

Financing Activities

Net cash provided by financing activities was \$44.0 million for the year ended December 31, 2022, which was comprised of \$44.4 million of net proceeds raised from the February 2022 private placement transactions with Innoviva, \$0.1 million of proceeds for exercise of stock options, and a payment of \$0.5 million for offering costs associated with a planned equity issuance in 2023.

Net cash provided by financing activities was \$25.5 million for the year ended December 31, 2021, which was primarily comprised of \$19.3 million net proceeds raised from the January 2021 private placement transactions with Innoviva, \$6.9 million net proceeds raised from the October 2021 private placement transaction with CFF and Innoviva, and \$0.6 million of proceeds received from stock option exercises, offset by a principal payment of \$1.4 million in deferred consideration related to the time-based payment obligation in connection with the SGI asset acquisition.

Liquidity, Capital Resources and Financial Condition

We have prepared our consolidated financial statements on a going concern basis, which assumes that we will realize our assets and satisfy our liabilities in the normal course of business. However, we have incurred net losses since our inception and have negative operating cash flows. These circumstances raise substantial doubt about our ability to continue as a going concern. The accompanying financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of the uncertainty concerning our ability to continue as a going concern. Management plans to raise additional capital through equity offerings, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. While management believes this plan to raise additional funds will alleviate the conditions that raise substantial doubt, these plans are not entirely within its control and cannot be assessed as being probable of occurring. We may not be able to secure additional financing in a timely manner or on favorable terms, if at all.

On January 26, 2021 and October 28, 2021, we entered into a securities purchase agreement in connection with the January and October 2021 Private Placements. On February 9, 2022, we entered into a securities purchase agreement in connection with the February 2022 Private Placement.

On January 10, 2023, we entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva SO, a wholly owned subsidiary of Innoviva, Inc., a principal stockholder of us. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by our domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of our assets and the subsidiary guarantors.

The Credit Agreement provides that if a Qualified Financing, as defined in the Credit Agreement, occurs, the outstanding principal amount of, and all accrued and unpaid interest on, the Loan shall be converted into shares of our common stock at a price per share equal to a 15.0% discount to the lowest price per share for our common stock paid by investors in a Qualified Financing (which price paid by investors in a Qualified Financing may not be less than a 15.0% discount to the closing price of our common stock immediately prior to the consummation of a Qualified Financing event). The Credit Agreement also requires us to file a registration statement for the resale of all securities issued to the lender in connection with any conversion under the Credit Agreement. After the Registration Statement has been declared effective by the SEC, any outstanding Loan amount, including all accrued and unpaid interest thereon, may be converted at the lender’s option, into shares of our common stock at a price per share equal to the greater of book value or market value per share of our common stock on the date immediately preceding the effective date of the Credit Agreement, which is \$1.52 (as may be appropriately adjusted for any stock split, combination or similar act).

See the section entitled “Business—Recent Developments” for a description of the 2021 and 2022 Private Placements, which is incorporated herein by reference.

Management believes our existing cash resources will be sufficient to fund our planned operations into the third quarter of 2023, but not one year from the issuance of the 2022 financial statements. For the foreseeable future, our ability to continue our operations is dependent upon our ability to obtain additional capital.

In light of recent bank failures, the Company decided to move cash and cash equivalents previously held at regional banks to larger financial institutions. We do not anticipate any material impact on our financial condition or operations as a result of the recent bank failures.

Future Capital Requirements

We will need to raise additional capital in the future to continue to fund our operations. 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 and enforcing any patent applications, claims, patents and other intellectual property rights; and
- the costs of potential lawsuits involving us or our product candidates.

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

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

Any additional fundraising efforts may divert our management team 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. We cannot be certain that sufficient funds will be available to us when required or on acceptable terms. If we are unable to secure additional funds on a timely basis 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 loss of investment by our stockholders. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of such securities could result in dilution to our existing stockholders. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, financial markets in the United States and worldwide.

Critical Accounting Policies and Use of Estimates

Our significant accounting policies are described in Note 3 to the consolidated financial statements included in this Annual Report.

Our management's discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements as of December 31, 2022 and December 31, 2021, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates and judgments, including those related to impairment assessment of our grants and awards, indefinite lived intangible assets, and stock-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Grants and Awards

In applying the provisions of ASC Topic 606, *Revenue from Contracts with Customers* ("ASC 606"), Armata has determined that grants and awards are out of the scope of ASC 606 because the funding entities do not meet the definition of a "customer", as defined by ASC 606, as there is not considered to be a transfer of control of goods or services. With respect to each grant or award, the Company determines if it has a collaboration in accordance with ASC Topic 808, *Collaborative Arrangements* ("ASC 808"). To the extent the grant or award is within the scope of ASC 808, the Company recognizes the award upon achievement of certain milestones as credits to research and development expenses. For grant and awards outside the scope of ASC 808, the Company applies ASC 606 or International Accounting Standards No. 20, *Accounting for Government Grants and Disclosure of Government Assistance*, by analogy, and revenue is recognized when the Company incurs expenses related to the grants for the amount the Company is entitled to under the provisions of the contract.

Armata also considers the guidance in ASC Topic 730, *Research and Development* ("ASC 730"), which requires an assessment, at the inception of the grant or award, of whether the agreement is a liability. If Armata is obligated to repay funds received regardless of the outcome of the related research and development activities, then Armata is required to estimate and recognize that liability. Alternatively, if Armata is not required to repay the funds, then payments received are recorded as revenue or contra-expense as the expenses are incurred.

Deferred grant or award liability represents award funds received or receivable for which the allowable expenses have not yet been incurred as of the balance sheet date.

Impairment of Goodwill

We perform our goodwill impairment analysis at the reporting unit level. For the years ended December 31, 2022 and 2021, our company has one reporting unit. We perform our annual impairment analysis by either doing a qualitative assessment of a reporting unit's fair value from the last quantitative assessment to determine if there is potential impairment, or comparing a reporting unit's estimated fair value to its carrying amount. If a quantitative assessment is performed the evaluation includes management estimates of cash flow projections based on internal future projections and/or use of a market approach by looking at market values of comparable companies. Our market capitalization is also considered as a part of this analysis.

In accordance with our accounting policy, we completed the annual evaluation for impairment of goodwill as of December 31, 2022 using the qualitative method and determined that no impairment existed.

Impairment Review of In-process Research and Development

We test our IPR&D asset for impairment as of December 31 of each year or more frequently if indicators of impairment are present. The authoritative accounting guidance provides an optional qualitative assessment for any

indicators that indefinite-lived intangible assets are impaired. If it is determined that it is more likely than not that the indefinite-lived intangible assets, including IPR&D, are impaired, the fair value of the indefinite-lived intangible assets is compared with the carrying amount and impairment is recorded for any excess of the carrying amount over the fair value of the indefinite-lived intangible assets.

If and when a quantitative analysis of IPR&D assets is required based on the result of the optional qualitative assessment, the estimated fair value of IPR&D assets is calculated based on the income approach, which includes discounting expected future net cash flows associated with the assets to a net present value. The fair value measurements utilized to perform the impairment analysis are categorized within Level 3 of the fair value hierarchy. Significant management judgment is required in the forecast of future operating results that are used in our impairment analysis. The estimates management use are consistent with the plans and estimates that it uses to manage its business. Significant assumptions utilized the income approach model include the discount rate, timing of clinical studies and regulatory approvals, the probability of success of its research and development programs, timing of commercialization of these programs, forecasted sales, gross margin, selling, general and administrative expenses, capital expenditures, as well as anticipated growth rates. Our analysis indicated no impairment existed.

Research and Development

All research and development costs are expensed as incurred. Research and development costs consist primarily of salaries, employee benefits, costs associated with preclinical studies and clinical trials (including amounts paid to clinical research organizations and other professional services) and in process research and development expenses. Payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received.

We record accruals for estimated research and development costs, comprising payments for work performed by third party contractors, laboratories, participating clinical trial sites, and others. Some of these contractor's bill monthly based on actual services performed, while others bill periodically based upon achieving certain contractual milestones. For the latter, we accrue the expenses as goods or services are used or rendered. Clinical trial site costs related to patient enrollment are accrued as patients enter and progress through the trial. Judgments and estimates are made in determining the accrued balances at the end of the reporting period.

Leases

We determine if an arrangement contains a lease at inception. We currently only have operating leases. We recognize a right-of-use operating lease asset and associated short- and long-term operating lease liability on the consolidated balance sheet for operating leases greater than one year. The right-of-use assets represent our right to use an underlying asset for the lease term and the lease liabilities represent our obligation to make lease payments arising from the lease arrangements. Right-of-use operating lease assets and lease liabilities are recognized based on the present value of the future minimum lease payments, including noncash lease payments, we will pay over the lease term. We determine the lease term at the inception of each lease, which includes renewal options only if we conclude that such options are reasonably certain to be exercised.

As our leases do not provide an interest rate implicit in the lease, we use our incremental borrowing rate, based on the information available on the date of adoption of Topic 842, *Leases*, as of the lease inception date or at the date of remeasurement in determining the present value of future payments. We recognize rent expense for the minimum lease payments on a straight-line basis over the expected term of the leases. We recognize period expenses, such as common area maintenance expenses, in the period such expenses are incurred.

Stock-Based Compensation

Compensation expense related to stock options granted is measured at the grant date based on the estimated fair value of the award and is recognized on an accelerated attribution method over the requisite service period. We determine the estimated fair value of each stock option on the date of grant using the Black-Scholes valuation model which uses assumptions regarding a number of complex and subjective variables. The risk-free interest rate is based on

the U.S. Treasury yield for a period consistent with the expected term of the option in effect at the time of the grant. Expected volatility is based on an analysis of the historical volatility of Armata and peer companies' common stock. The expected term represents the period that we expect our stock options to be outstanding. The expected term assumption is estimated using the simplified method set forth in the SEC's Staff Accounting Bulletin 110, which is the mid-point between the option vesting date and the expiration date. For stock options granted to parties other than employees or directors, we elect, on a grant by grant basis, to use the expected term or the contractual term of the option award. We have never declared or paid dividends on our common stock and have no plans to do so in the foreseeable future. Forfeitures are recognized as a reduction of stock-based compensation expense as they occur. Changes in these assumptions may lead to variability with respect to the amount of stock compensation expense we recognize related to stock options.

Stock-based compensation expense for an award with a performance condition is recognized when the achievement of such performance condition is determined to be probable. If the outcome of such performance condition is not determined to be probable or is not met, no compensation expense is recognized and any previously recognized compensation expense is reversed.

Recent Accounting Pronouncements

Refer to *Note 3* of the notes to the consolidated financial statements contained elsewhere in this Annual Report.

Off-Balance Sheet Arrangements

As of December 31, 2022, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. In addition, we do not engage in trading activities involving non-exchange traded contracts. Therefore, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information required under this item.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

ARMATA PHARMACEUTICALS, INC.

INDEX TO AUDITED CONSOLIDATED FINANCIAL STATEMENTS

Armata Pharmaceuticals, Inc.

Report of Independent Registered Public Accounting Firm (Ernst & Young, LLP; San Diego, CA; PCAOB ID: 42)	86
Consolidated Balance Sheets as of December 31, 2022 and 2021	88
Consolidated Statements of Operations for the Years Ended December 31, 2022 and 2021	89
Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2022 and 2021	90
Consolidated Statements of Cash Flows for the Years Ended December 31, 2022 and 2021	91
Notes to Consolidated Financial Statements for the Years Ended December 31, 2022 and 2021	92

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Armata Pharmaceuticals, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Armata Pharmaceuticals, Inc. (the Company) as of December 31, 2022 and 2021, and the related consolidated statements of operations, stockholders' equity, and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has suffered recurring losses and negative cash flows from operations and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accrued clinical trial expenses and related research and development costs

Description of the Matter During 2022, the Company incurred \$35.0 million for research and development costs and as of December 31, 2022, the Company recorded \$2.7 million for accrued clinical trial expenses. As described in Note 3 of the consolidated financial statements, the Company records accruals for estimated ongoing research and development costs, comprising payments for work performed by third party contractors, laboratories, participating clinical trial sites, and others. The Company accrues for the estimated ongoing clinical trial site costs based on patient enrollment and progress of the trial.

Auditing management's accounting for accrued clinical trial expenses and related research and development costs is especially challenging as evaluating the progress or stage of completion of the activities under the Company's research and development agreements is dependent upon a high volume of data from third-party service providers and internal clinical personnel, which is tracked in spreadsheets and other end user computing programs.

How We Addressed the Matter in Our Audit To test the completeness of the Company's accrued clinical trial expenses and related research and development costs, we obtained supporting evidence of the research and development activities performed for significant clinical trials. To assess the appropriate measurement of accrued clinical trial expenses and related research and development costs, our audit procedures included, among others, obtaining and inspecting significant agreements and agreement amendments, evaluating the Company's documentation of trial timelines and future projections of trial progress, confirming amounts incurred to-date with third-party service providers, and testing a sample of transactions and comparing the costs against related invoices and contracts. We also tested a sample of subsequent payments to evaluate the completeness of the accrued expenses and compared the results to the current year accrual.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2019.

San Diego, California

March 16, 2023

Armata Pharmaceuticals, Inc.
Consolidated Balance Sheets

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Assets		
Current assets		
Cash and cash equivalents	\$ 14,852,000	\$ 10,288,000
Awards receivable	1,936,000	2,989,000
Prepaid expenses and other current assets	10,259,000	1,718,000
Total current assets	27,047,000	14,995,000
Restricted cash	5,960,000	1,200,000
Property and equipment, net	3,617,000	2,220,000
Operating lease right-of-use asset	43,035,000	35,852,000
In-process research and development	10,256,000	10,256,000
Goodwill	3,490,000	3,490,000
Other assets	2,429,000	1,755,000
Total assets	<u>\$ 95,834,000</u>	<u>\$ 69,768,000</u>
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable and accrued liabilities	\$ 6,034,000	\$ 2,270,000
Accrued compensation	1,828,000	1,035,000
Current portion of operating lease liabilities	17,011,000	1,509,000
Total current liabilities	24,873,000	4,814,000
Operating lease liabilities, net of current portion	31,804,000	36,480,000
Deferred tax liability	3,077,000	3,077,000
Total liabilities	59,754,000	44,371,000
Stockholders' equity		
Common stock, \$0.01 par value; 217,000,000 shares authorized; 36,144,706 and 27,112,299 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively	361,000	271,000
Additional paid-in capital	275,493,000	227,983,000
Accumulated deficit	(239,774,000)	(202,857,000)
Total stockholders' equity	36,080,000	25,397,000
Total liabilities and stockholders' equity	<u>\$ 95,834,000</u>	<u>\$ 69,768,000</u>

The accompanying notes are an integral part of these consolidated financial statements.

Armata Pharmaceuticals, Inc.
Consolidated Statements of Operations

	Year Ended December 31,	
	2022	2021
Grant revenue	\$ 5,508,000	\$ 4,474,000
Operating expenses		
Research and development	35,017,000	20,015,000
General and administrative	7,437,000	8,281,000
Total operating expenses	42,454,000	28,296,000
Loss from operations	(36,946,000)	(23,822,000)
Other income (expense)		
Gain upon extinguishment of Paycheck Protection Program loan	—	726,000
Interest income	29,000	5,000
Interest expense	—	(64,000)
Total other income (expense), net	29,000	667,000
Net loss	\$ (36,917,000)	\$ (23,155,000)
Per share information:		
Net loss per share, basic and diluted	\$ (1.08)	\$ (0.96)
Weighted average shares outstanding, basic and diluted	34,294,124	24,104,146

The accompanying notes are an integral part of these consolidated financial statements.

Armata Pharmaceuticals, Inc.
Consolidated Statements of Stockholders' Equity

	Stockholders' Equity				
	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balances, December 31, 2020	18,688,461	\$ 187,000	\$ 198,372,000	\$ (179,702,000)	\$ 18,857,000
Sale of common stock, net of issuance costs	8,275,060	83,000	26,223,000	—	26,306,000
Exercises of warrants	52,000	1,000	290,000	—	291,000
Return of restricted stock awards for tax withholdings	(25,424)	—	(106,000)	—	(106,000)
Forfeiture of restricted stock awards	(1,047)	—	—	—	—
Exercise of stock options	99,517	—	322,000	—	322,000
Issuance of inducement stock awards	23,732	—	—	—	—
Stock-based compensation	—	—	2,882,000	—	2,882,000
Net loss	—	—	—	(23,155,000)	(23,155,000)
Balances, December 31, 2021	27,112,299	\$ 271,000	\$ 227,983,000	\$ (202,857,000)	\$ 25,397,000
Sale of common stock, net of issuance costs	9,000,000	90,000	44,301,000	—	44,391,000
Return of restricted stock awards for tax withholdings	(5,511)	—	(21,000)	—	(21,000)
Forfeiture of restricted stock awards	(369)	—	—	—	—
Exercise of stock options	38,287	—	125,000	—	125,000
Stock-based compensation	—	—	3,105,000	—	3,105,000
Net loss	—	—	—	(36,917,000)	(36,917,000)
Balances, December 31, 2022	36,144,706	\$ 361,000	\$ 275,493,000	\$ (239,774,000)	\$ 36,080,000

The accompanying notes are an integral part of these consolidated financial statements.

Armata Pharmaceuticals, Inc.
Consolidated Statements of Cash Flows

	Year Ended December 31,	
	2022	2021
Operating activities:		
Net loss	\$ (36,917,000)	\$ (23,155,000)
Adjustments required to reconcile net loss to net cash used in operating activities:		
Depreciation	892,000	1,169,000
Gain upon extinguishment of Paycheck Protection Program loan	—	(722,000)
Stock-based compensation	3,105,000	2,882,000
Non-cash interest expense	—	60,000
Payment of accreted interest for deferred consideration for asset acquisition	—	(586,000)
Changes in operating assets and liabilities:		
Awards receivable	1,053,000	(2,428,000)
Accounts payable and accrued liabilities	3,665,000	184,000
Accrued compensation	793,000	472,000
Operating lease right-of-use asset and liability, net	3,643,000	499,000
Prepaid expenses and other current assets	(8,715,000)	(1,950,000)
Net cash used in operating activities	(32,481,000)	(23,575,000)
Investing activities:		
Purchases of property and equipment	(2,211,000)	(1,304,000)
Net cash used in investing activities	(2,211,000)	(1,304,000)
Financing activities:		
Principal payment of deferred consideration for asset acquisition	—	(1,414,000)
Payment of deferred offering costs	(500,000)	—
Proceeds from sale of common stock, net of offering costs	44,391,000	26,319,000
Proceeds from exercise of warrants and stock options	125,000	613,000
Net cash provided by financing activities	44,016,000	25,518,000
Net increase in cash, cash equivalents and restricted cash	9,324,000	639,000
Cash, cash equivalents and restricted cash, beginning of period	11,488,000	10,849,000
Cash, cash equivalents and restricted cash, end of period	<u>\$ 20,812,000</u>	<u>\$ 11,488,000</u>
Supplemental disclosure of cash flow information:		
ROU asset obtained by assuming operating lease liabilities	\$ 8,669,000	\$ 26,056,000
Paycheck Protection Program loan forgiveness	\$ —	\$ 722,000
Unpaid offering costs	\$ —	\$ 13,000
Property and equipment included in accounts payable	\$ 78,000	\$ 38,000
	Year Ended December 31,	
	2022	2021
Cash and cash equivalents	\$ 14,852,000	\$ 10,288,000
Restricted cash	5,960,000	1,200,000
Cash, cash equivalents and restricted cash	<u>\$ 20,812,000</u>	<u>\$ 11,488,000</u>

The accompanying notes are an integral part of these consolidated financial statements.

Armata Pharmaceuticals, Inc.
Notes to Consolidated Financial Statements

1. Organization and Description of the Business

Armata Pharmaceuticals, Inc. (“Armata”, and together with its subsidiaries, is referred to herein as, the “Company”) is a clinical-stage biotechnology company focused on the development of precisely targeted bacteriophage therapeutics for the treatment of antibiotic-resistant and difficult-to-treat bacterial infections using its proprietary bacteriophage-based technology. On May 9, 2019, the Company’s predecessor, C3J Therapeutics, Inc. (“C3J”) completed a reverse merger with AmpliPhi Biosciences Corporation, a bacteriophage development stage company (“AmpliPhi”), where Ceres Merger Sub, Inc., a wholly-owned subsidiary of AmpliPhi, merged with and into C3J (the “Merger”). Immediately prior to the Merger, AmpliPhi changed its name to Armata Pharmaceuticals, Inc. Armata’s common stock is traded on the NYSE American exchange under the ticker symbol “ARMP”.

2. Liquidity

The Company has prepared its consolidated financial statements on a going concern basis, which assumes that the Company will realize its assets and satisfy its liabilities in the normal course of business. However, the Company has incurred net losses since its inception and has negative operating cash flows. These circumstances raise substantial doubt about the Company’s ability to continue as a going concern. The accompanying financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of the uncertainty concerning the Company’s ability to continue as a going concern.

On January 10, 2023, the Company entered into, as borrower, a secured convertible credit and security agreement (the “Credit Agreement”) with Innoviva Strategic Opportunities LLC, a wholly-owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, “Innoviva”), a principal stockholder of the Company. The Credit Agreement provides for a secured term loan facility in an aggregate amount of \$30 million (the “Loan”) at an interest rate of 8.0% per annum, and has a maturity date of January 10, 2024. Repayment of the Loan is required to be guaranteed by the Company’s domestic subsidiaries and foreign material subsidiaries, and the Loan is secured by substantially all of the assets of the Company and the subsidiary guarantors.

The Credit Agreement provides that if a Qualified Financing (as defined in the Credit Agreement) occurs, the outstanding principal amount of, and all accrued and unpaid interest on, the Loan shall be converted into shares of the Company’s common stock, par value \$0.01 per share (“Common Stock”) at a price per share equal to a 15.0% discount to the lowest price per share for Common Stock paid by investors in a Qualified Financing (which price paid by investors in a Qualified Financing may not be less than a 15.0% discount to the closing price of Common Stock immediately prior to the consummation of a Qualified Financing event). The Credit Agreement also requires the Company to file a registration statement (the “Registration Statement”) for the resale of all securities issued to the lender in connection with any conversion under the Credit Agreement. After the Registration Statement has been declared effective by the U.S. Securities and Exchange Commission, any outstanding Loan amount, including all accrued and unpaid interest thereon, may be converted at the lender’s option, into shares of Common Stock at a price per share equal to the greater of book value or market value per share of Common Stock on the date immediately preceding the effective date of the Credit Agreement, which is \$1.52 (as may be appropriately adjusted for any stock split, combination or similar act).

On February 9, 2022, the Company entered into a securities purchase agreement (“February 2022 Securities Purchase Agreement”) to sell its common stock and warrants to Innoviva. The gross proceeds to the Company from the transaction were \$45 million.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases were completed in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of

common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

On October 28, 2021, the Company entered into a securities purchase agreement (the “October 2021 Securities Purchase Agreement”) with the Cystic Fibrosis Foundation (“CFF”), a Delaware corporation, the Company’s partner for its lead Phase 1b/2a clinical development program, and Innoviva Strategic Opportunities LLC, a wholly-owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, “Innoviva”) for the private placement of newly issued shares of common stock, par value \$0.01 per share, of the Company (“Common Stock”). Pursuant to the October 2021 Securities Purchase Agreement, the Company issued and sold 909,091 shares to CFF and 1,212,122 shares to Innoviva, each at a per share price of \$3.30 (the “October 2021 Private Placements”). The Company received aggregate gross proceeds from the October 2021 Private Placements of approximately \$7.0 million, before deducting transaction expenses.

On January 26, 2021, the Company entered into a securities purchase agreement (the “January 2021 Securities Purchase Agreement”) with Innoviva, pursuant to which the Company issued and sold to Innoviva, in a private placement, up to 6,153,847 newly issued shares of Common Stock, and warrants (the “Common Warrants”) to purchase up to 6,153,847 shares of Common Stock, with an exercise price per share of \$3.25 (the “January 2021 Private Placement”).

Management plans to raise additional capital through equity offerings, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. While management believes this plan to raise additional funds will alleviate the conditions that raise substantial doubt, these plans are not entirely within its control and cannot be assessed as being probable of occurring. The Company’s ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, financial markets in the United States and worldwide. The Company may not be able to secure additional financing in a timely manner or on favorable terms, if at all. Furthermore, if the Company issues equity securities to raise additional funds, its existing stockholders may experience dilution, and the new equity securities may have rights, preferences and privileges senior to those of the Company’s existing stockholders. If the Company raises additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to its potential products on terms that are not favorable to the Company. If the Company is unable to raise capital when needed or on attractive terms, it would be forced to delay, reduce or eliminate its research and development programs or other operations. If any of these events occur, the Company’s ability to achieve the development and commercialization goals would be adversely affected.

3. Significant Accounting Policies

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries including C3J, Biocontrol Limited and AmpliPhi Australia Pty Ltd. All significant intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States (“U.S. GAAP”) requires management to make estimates and assumptions that affect the amounts reported in its consolidated financial statements and accompanying notes. On an ongoing basis, management evaluates these estimates and judgments, which are based on historical and anticipated results and trends and on various other assumptions that management believes to be reasonable under the circumstances. By their nature, estimates are subject to an inherent degree of uncertainty and, as such, actual results may differ from management’s estimates.

Cash and Cash Equivalents

Cash and cash equivalents consist primarily of deposits with commercial banks and financial institutions.

Fair Value of Financial Instruments

Financial instruments include cash equivalents, prepaid expenses and other assets, restricted cash, accounts payable, accrued expenses and deferred asset acquisition consideration. The carrying amount of cash equivalents prepaid expenses and other assets, restricted cash, accounts payable and accrued expenses are generally considered to be representative of their respective fair values because of the short-term nature of those instruments.

Property and Equipment

Property and equipment are recorded at cost and depreciated over their estimated useful lives using the straight-line method. Maintenance and repairs that do not improve or extend the lives of the respective assets are expensed to operations as incurred. Upon disposal, retirement, or sale of an asset, the related cost and accumulated depreciation is removed from the accounts and any resulting gain or loss is included in the results of operations. Estimated useful lives for property and equipment are as follows:

	Estimated Useful Lives
Laboratory equipment	5 – 10 years
Office and computer equipment	3 – 5 years
Leasehold improvements	Shorter of lease term or useful life

Fair Value Measurements

Fair value measurements are market-based measurements, not entity-specific measurements. Therefore, fair value measurements are determined based on the assumptions that market participants would use in pricing the asset or liability. The Company follows a three-level hierarchy to prioritize the inputs used in the valuation techniques to derive fair values. The basis for fair value measurements for each level within the hierarchy is described below:

- Level 1—Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access.
- Level 2—Valuations based on quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active and models for which all significant inputs are observable, either directly or indirectly.
- Level 3—Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The Company did not have any assets or liabilities that require recurring or nonrecurring measurements.

Impairment of Long-Lived Assets

The Company reviews long-lived assets for impairment when events or changes in circumstances indicate the carrying value of the assets may not be recoverable. Recoverability is measured by comparison of the book values of the assets to future net undiscounted cash flows that the assets or the asset groups are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the book value of the assets exceed their fair value, which is measured based on the estimated discounted future net cash flows arising from the assets or asset groups. No impairment losses on long-lived assets have been recorded through December 31, 2022 or 2021.

In-Process Research and Development (“IPR&D”) and Acquired IPR&D

IPR&D assets are intangible assets with indefinite lives and are not subject to amortization. The Company’s IPR&D assets represent capitalized in-process bacteriophage development programs for *S. aureus* infections that the Company acquired through a business combination. Such assets are initially measured at their acquisition-date fair values and are subject to impairment testing at least annually until completion or abandonment of research and development efforts associated with the projects. Upon successful completion of each project, the Company makes a determination as to the then remaining useful life of the intangible asset and begins amortization.

The Company tests IPR&D assets for impairment as of December 31 of each year or more frequently if indicators of impairment are present. The authoritative accounting guidance provides an optional qualitative assessment for any indicators that indefinite-lived intangible assets are impaired. If it is determined that it is more likely than not that the indefinite-lived intangible assets, including IPR&D, are impaired, the fair value of the indefinite-lived intangible assets is compared with the carrying amount and impairment is recorded for any excess of the carrying amount over the fair value of the indefinite-lived intangible assets.

If and when a quantitative analysis of IPR&D assets is required based on the result of the optional qualitative assessment, the estimated fair value of IPR&D assets is calculated based on the income approach, which includes discounting expected future net cash flows associated with the assets to a net present value. The fair value measurements utilized to perform the impairment analysis are categorized within Level 3 of the fair value hierarchy. Significant management judgment is required in the forecast of future operating results that are used in the Company’s impairment analysis. The estimates the Company uses are consistent with the plans and estimates that it uses to manage its business. Significant assumptions utilized in the Company’s income approach model include the discount rate, timing of clinical studies and regulatory approvals, the probability of success of its research and development programs, timing of commercialization of these programs, forecasted sales, gross margin, selling, general and administrative expenses, capital expenditures, as well as anticipated growth rates.

During the fourth quarter ended December 31, 2022, the Company performed the annual evaluation of its IPR&D assets for impairment. The Company considered the development timelines for its *S. aureus* development program and noted no qualitative factors that would indicate potential impairment of its IPR&D asset. The Company also performed a quantitative analysis for impairment analysis and based on this analysis, the fair value of this bacteriophage program was greater than its carrying value as of December 31, 2022. Consequently, no impairment was noted for the IPR&D asset.

Goodwill

Goodwill, which has an indefinite useful life, represents the excess of purchase consideration over the fair value of net assets acquired in an acquisition. Goodwill is not subject to amortization and is required to be tested for impairment at least on an annual basis. The Company tests goodwill for impairment as of December 31 of each year. The Company determines whether goodwill may be impaired by comparing the carrying value of the single reporting unit, including goodwill, to the fair value of the reporting unit. If the fair value is less than the carrying amount, a more detailed analysis is performed to determine whether goodwill is impaired. The impairment loss, if any, is measured as the excess of the carrying value of the goodwill over the implied fair value of the goodwill and is recorded in the Company’s consolidated statements of operations. There was no impairment of goodwill during the year ended December 31, 2022 or 2021.

Research and Development

All research and development costs are expensed as incurred. Research and development costs consist primarily of salaries, employee benefits, costs associated with preclinical studies and clinical trials (including amounts paid to clinical research organizations and other professional services). Payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received.

The Company records accruals for estimated research and development costs, comprising payments for work performed by third party contractors, laboratories, participating clinical trial sites, and others. Some of these contractors bill monthly based on actual services performed, while others bill periodically based upon achieving certain contractual

milestones. For the latter, the Company accrues the expenses as goods or services are used or rendered. Clinical trial site costs related to patient enrollment are accrued as patients enter and progress through the trial. Judgments and estimates are made in determining the accrued balances at the end of the reporting period.

Research and development expenses are partially offset by the benefit of tax incentive payments for qualified research and development expenditures from the Australian tax authority (“AU Tax Rebates”). The Company does not record AU Tax Rebates until payment is received due to the uncertainty of receipt.

Stock-Based Compensation

Compensation expense related to stock options granted to employees and non-employees is measured at the grant date based on the estimated fair value of the award and is recognized on the accelerated attribution method over the requisite service period. Forfeitures are recognized as a reduction of stock-based compensation expense as they occur. Stock-based compensation expense for an award with a performance condition is recognized when the achievement of such performance condition is determined to be probable. If the outcome of such performance condition is not determined to be probable or is not met, no compensation expense is recognized and any previously recognized compensation expense is reversed.

Foreign Currency Translations and Transactions

The functional currency of the Company and its wholly owned subsidiaries is the U.S. dollar.

Revenue Recognition

The Company recognizes revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which it expects to be entitled in exchange for those goods or services. To determine revenue recognition for contracts with customers, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies its performance obligations. At contract inception, the Company assesses the goods or services agreed upon within each contract and assess whether each good or service is distinct and determine those that are performance obligations. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied. During the years ended December 31, 2022 and 2021, the Company did not recognize revenue or deferred revenue from contracts with customers.

Grants and Awards

In applying the provisions of ASC Topic 606, *Revenue from Contracts with Customers* (“ASC 606”), Armata has determined that grants and awards are out of the scope of ASC 606 because the funding entities do not meet the definition of a “customer”, as defined by ASC 606, as there is not considered to be a transfer of control of goods or services. With respect to each grant or award, the Company determines if it has a collaboration in accordance with ASC Topic 808, *Collaborative Arrangements* (“ASC 808”). To the extent the grant or award is within the scope of ASC 808, the Company recognizes the award upon achievement of certain milestones as credits to research and development expenses. For grant and awards outside the scope of ASC 808, the Company applies ASC 606 or International Accounting Standards No. 20, *Accounting for Government Grants and Disclosure of Government Assistance*, by analogy, and revenue is recognized when the Company incurs expenses related to the grants for the amount the Company is entitled to under the provisions of the contract.

Armata also considers the guidance in ASC Topic 730, *Research and Development* (“ASC 730”), which requires an assessment, at the inception of the grant or award, of whether the agreement is a liability. If Armata is obligated to repay funds received regardless of the outcome of the related research and development activities, then Armata is required to estimate and recognize that liability. Alternatively, if Armata is not required to repay the funds, then payments received are recorded as revenue or contra-expense as the expenses are incurred.

Deferred grant or award liability represents award funds received or receivable for which the allowable expenses have not yet been incurred as of the balance sheet date.

Leases

The Company determines if an arrangement contains a lease at inception. The Company currently only has operating leases. The Company recognizes a right-of-use operating lease asset and associated short- and long-term operating lease liability on its consolidated balance sheet for operating leases greater than one year. The right-of-use assets represent the Company's right to use an underlying asset for the lease term and the lease liabilities represent the Company's obligation to make lease payments arising from the lease arrangements. Right-of-use operating lease assets and lease liabilities are recognized based on the present value of the future minimum lease payments, including noncash lease payments, the Company will pay over the lease term. The Company determines the lease term at the inception of each lease, which includes renewal options only if the Company concludes that such options are reasonably certain to be exercised.

As the Company's leases do not provide an interest rate implicit in the lease, the Company uses its incremental borrowing rate, based on the information available on the date of adoption of Topic 842, *Leases*, as of the lease inception date or at the date of remeasurement in determining the present value of future payments. The Company recognizes rent expense for the minimum lease payments on a straight-line basis over the expected term of the leases. The Company recognizes period expenses, such as common area maintenance expenses, in the period such expenses are incurred.

Income Taxes

The Company utilizes the asset and liability method of accounting for income taxes. Deferred income taxes are recognized for the future tax consequences of temporary differences using enacted statutory tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Temporary differences include the differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities and net operating loss and tax credit carryforwards. The effect on deferred taxes of a change in tax rates is recognized in income (expense) in the period that includes the enactment date. The Company evaluates the likelihood that deferred tax assets will be recovered from future taxable income. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company's income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of tax liabilities involves dealing with uncertainties in the application of complex tax regulations. The Company recognizes liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement.

Basic and Diluted Net Loss per Share

Net earnings or loss per share ("EPS") is calculated in accordance with the applicable accounting guidance provided in ASC 260, *Earnings per Share*. Basic EPS is calculated by dividing net income or loss by the weighted-average number of common shares outstanding. Diluted net loss per share is computed in accordance with the treasury stock method and reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted to common stock. The calculation of diluted loss per share requires that, to the extent the average market price of the underlying shares for the reporting period exceeds the exercise price of the warrants, and the presumed exercise of such securities are dilutive to net loss per share for the period, an adjustment to net loss available to common stockholders used in the calculation is required to remove the change in fair value of the warrants from the numerator for the period. Likewise, an adjustment to the denominator is required to reflect the related dilutive shares, if any, under the treasury stock method.

Recent Accounting Pronouncements Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments*. The standard amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses for most financial assets and certain other instruments that aren't measured at fair value through net income. For available-for-sale debt securities, entities will be required to recognize an allowance for credit losses rather than a reduction in carrying value of the asset. Entities will no longer be permitted to consider the length of time that fair value has been less than amortized cost when evaluating when credit losses should be recognized. This new guidance is effective for calendar-year smaller reporting public entities in the first quarter of 2023. The Company is currently evaluating the impact of this ASU and does not expect that adoption of this standard will have a material impact on its consolidated financial statements or related disclosures.

In August 2020, the FASB issued ASU No. 2020-06, *Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)* ("ASU 2020-06"). ASU 2020-06 eliminates the beneficial conversion and cash conversion accounting models for convertible instruments. It also amends the accounting for certain contracts in an entity's own equity that are currently accounted for as derivatives because of specific settlement provisions. In addition, ASU 2020-06 modifies how particular convertible instruments and certain contracts that may be settled in cash or shares impact the diluted EPS computation. The amendments in ASU 2020-06 are effective for the Company as of January 1, 2024. Early adoption is permitted. The Company is currently evaluating the impact of ASU 2020-06 on its financial statements and does not expect the adoption of this ASU to have a material impact on the Company's consolidated financial statements.

4. Net Loss per Share

The following outstanding securities at December 31, 2022 and 2021 have been excluded from the computation of diluted weighted average shares outstanding for the years ended December 31, 2022 and 2021, as they would have been anti-dilutive:

	December 31, 2022	December 31, 2021
Options	3,352,803	2,409,682
Unvested restricted stock units	30,000	30,000
Restricted stock awards	99,666	124,018
Warrants	20,549,338	16,647,219
Total	24,031,807	19,210,919

5. Balance Sheet Details

Property and Equipment, net

Property and equipment consisted of the following:

	December 31, 2022	December 31, 2021
Laboratory equipment	\$ 10,007,000	\$ 7,754,000
Furniture and fixtures	817,000	817,000
Office and computer equipment	449,000	451,000
Leasehold improvements	3,447,000	3,423,000
Total	14,720,000	12,445,000
Less: accumulated depreciation	(11,103,000)	(10,225,000)
Property and equipment, net	\$ 3,617,000	\$ 2,220,000

Depreciation expense totaled \$0.9 million and \$1.2 million the years ended December 31, 2022 and 2021, respectively.

Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities consisted of the following:

	December 31, 2022	December 31, 2021
Accounts payable	\$ 1,678,000	\$ 1,138,000
Accrued clinical trial expenses	2,650,000	529,000
Other accrued expenses	1,706,000	603,000
	<u>\$ 6,034,000</u>	<u>\$ 2,270,000</u>

6. Income Taxes

Loss before income taxes consisted of the following components:

	Year Ended December 31,	
	2022	2021
United States	\$ (32,228,000)	\$ (21,714,000)
Foreign	(4,689,000)	(1,441,000)
Total	<u>\$ (36,917,000)</u>	<u>\$ (23,155,000)</u>

The company has not recognized any current or deferred tax expense on its US and Foreign pre-tax losses for the years ended December 31, 2022 and 2021.

The differences between the Company's effective tax rate and the U.S. federal statutory tax rate were as follows:

	December 31,	
	2022	2021
U.S. federal statutory income tax rate	21.0 %	21.0 %
Adjustments for tax effects of:		
State income taxes, net of federal tax	7.3 %	6.2 %
Stock-based compensation	(0.2)%	(0.8)%
Change in valuation allowance	(28.6)%	(27.2)%
Other	0.5 %	0.8 %
Effective income tax rate	<u>0.0 %</u>	<u>0.0 %</u>

Significant components of the Company's deferred tax assets and liabilities were as follows:

	December 31,	
	2022	2021
Deferred tax assets:		
Net operating loss carryforwards	\$ 42,525,000	\$ 36,405,000
Capitalized research and development	19,103,000	16,306,000
Stock-based compensation	3,192,000	2,467,000
Depreciation and amortization	929,000	1,301,000
Lease accounting	13,660,000	10,631,000
Other	1,452,000	1,174,000
Total deferred tax assets before valuation allowance	80,861,000	68,284,000
Less: valuation allowance	(68,818,000)	(58,251,000)
Total deferred tax assets after valuation allowance	12,043,000	10,033,000
Deferred tax liabilities:		
Right-of-use asset	(12,043,000)	(10,033,000)
In-process research and development	(3,077,000)	(3,077,000)
Total deferred tax liabilities	(15,120,000)	(13,110,000)
Net deferred tax liability	\$ (3,077,000)	\$ (3,077,000)

The Company's net operating loss carryforwards at December 31, 2022 are \$145 million and \$116 million for federal and state income tax purposes, respectively. Federal and state net operating loss carryforwards are available to offset future taxable income, if any, and will begin to expire in 2026 to 2028, respectively. The federal net operating loss carryforwards generated in tax years 2018 and forward will carryforward indefinitely and be available to offset up to 80% of future taxable income each year, subject to certain modifications made by the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) enacted in 2020.

The ability of the Company to utilize net operating loss carryforwards to reduce future domestic taxable income and domestic income tax is subject to various limitations under the Internal Revenue Code. The utilization of such carryforwards may be limited upon the occurrence of certain ownership changes during any three-year period resulting in an aggregate change of more than 50% in beneficial ownership. The Company previously determined an ownership change occurred on May 9, 2019 as a result of a business combination. The resulting limitation significantly reduced the Company's ability to utilize its net operating loss and credit carryovers before the expire. Accordingly, in 2019 the Company reduced its deferred tax assets for the net operating loss and credit carryforwards that were expected to expire unused with a corresponding offset to the valuation allowance recorded against such assets. Future ownership changes under Section 382 may also limit the Company's ability to fully utilize any remaining tax benefits.

The Company has generated federal and state income tax losses in all years since its inception. Accordingly, management has determined that significant negative evidence precludes the Company from recording a net deferred tax asset for financial statement purposes as it is more likely than not that its deferred tax assets will not be realized.

The Company files income tax returns in the U.S. federal jurisdiction, state of California and certain foreign jurisdictions. As of December 31, 2022, the Company is no longer subject to U.S. federal income tax examinations for tax years ended on or before December 31, 2018 or to California state income tax examinations for tax years ended on or before December 31, 2017. However, to the extent allowed by law, the tax authorities may have the right to examine prior periods where net operating losses or tax credits were generated and carried forward, and make adjustments up to the amount of the net operating loss or credit carryforward.

The Company did not have a liability for unrecognized tax benefits at December 31, 2022 and 2021.

The Company's policy is to classify interest and penalties on uncertain tax positions as a component of tax expense. As of December 31, 2022, the Company has no accrued interest or penalties related to uncertain tax positions.

7. Paycheck Protection Program Loan

In April 2020, the Company received loan proceeds of \$717,000 (“PPP Loan”) under the Paycheck Protection Program (“PPP”). The PPP, established as part of the Coronavirus Aid, Relief and Economic Security Act, provides for loans to qualifying businesses for amounts up to 2.5 times the average monthly payroll expenses of the qualifying business, calculated as provided under the PPP. The PPP Loan was unsecured, evidenced by a promissory note (the “Note”) given by the Company as borrower through its bank, serving as the lender. The interest rate on the Note was 1.0% per annum.

In July 2021, the Company received notification of forgiveness of the full loan amount and associated interest from the Small Business Administration. The Company recorded a gain of \$0.7 million from the PPP loan extinguishment in the statement of operations during the year ended December 31, 2021.

8. Commitments and Contingencies

Operating Leases

The Company leases office and research and development space under a non-cancelable operating lease in Marina del Rey, CA. The lease commenced January 1, 2012 and in April 2020, the Company amended the lease (“2020 Lease Amendment”) which, among other things, extended the lease term through December 31, 2031. Base annual rent for calendar year 2022, the first year under the Lease Amendment extended term, was approximately \$1.9 million, and base rent increases by 3% annually and will be \$2.5 million by the end of the amended term. In addition, the Company received a six-month rent abatement in 2020. The Company did not use an allowance for tenant improvements of \$0.8 million during 2021, which was used to offset rent payments as prescribed by the 2020 Lease Amendment starting in 2022. In accordance with authoritative guidance, the Company remeasured the lease liability in April 2020 to be \$11.7 million and related right of use asset of \$11.0 million as of the Lease Amendment date with an incremental borrowing rate of 12.89%.

Concurrent with the Company’s execution of the 2020 Lease Amendment, an irrevocable letter of credit in the amount of \$1.2 million was delivered to the landlord. Starting on February 1, 2022, and each year thereafter the letter of credit will be reduced by 20% of the then outstanding amount.

On October 28, 2021, the Company entered into a lease for office and research and development space under a non-cancellable lease in Los Angeles, CA (the “2021 Lease”). The 2021 Lease payment start date is May 1, 2022 and the total lease term is for 16 years and runs through 2038. Monthly rent for 2022 and 2023 will be fully or partially abated while the lessor and the Company complete planned tenant improvements to the facility. Base monthly rent will be approximately \$0.25 million in 2024. The Company is entitled to receive an allowance for tenant improvements of up to \$7.3 million, and the Company is responsible for construction costs over such allowance. Out of pocket expenses to be incurred by the Company are considered noncash lease payments, and included in the lease liability and right-of-use asset when the amount can be reasonably estimated. As of November 16, 2022, the Company finalized the budget to complete the construction of the 2021 Lease. Accordingly, the Company remeasured the lease liability and related right-of-use asset as of November 30, 2022, using an incremental borrowing rate of 11.8%. The remeasured lease liability of the 2021 Lease as of November 16, 2022 was \$37.0 million, and the related right of use asset was \$33.8 million.

In connection with the 2021 Lease, in 2022 the Company delivered an irrevocable standby letter of credit in the total amount of \$5.0 million to the landlord.

Future minimum annual lease payments under the Company's noncancelable operating leases as of December 31, 2022, are as follows:

	Operating Leases
2023	\$ 2,904,000
2024	4,512,000
2025	5,139,000
2026	5,293,000
2027	5,452,000
Thereafter	49,395,000
Total minimum lease payments	72,695,000
Plus: estimated short-term variable lease payments	14,954,000
Less: amount representing interest	(38,834,000)
Present value of operating lease obligations	48,815,000
Less: current portion	(17,011,000)
Noncurrent operating lease obligations	\$ 31,804,000

Rent expense was \$6.3 million and \$2.7 million for the years ended December 31, 2022 and 2021, respectively. Total cash payments for operating leases as included in the consolidated statements of cash flows during the year ended December 31, 2022 and 2021 was \$2.7 million and \$2.2 million, respectively.

Legal Proceedings

From time to time, the Company may be involved in disputes, including litigation, relating to claims arising out of operations in the normal course of business. Any of these claims could subject the Company to costly legal expenses and, while management generally believes that there is adequate insurance to cover many different types of liabilities, the Company's insurance carriers may deny coverage or policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on the consolidated results of operations and financial position. Additionally, any such claims, whether or not successful, could damage the Company's reputation and business. The Company is currently not a party to any legal proceedings, the adverse outcome of which, in management's opinion, individually or in the aggregate, would have a material adverse effect on its consolidated results of operations or financial position.

9. Synthetic Genomics Asset Acquisition

On February 28, 2018, C3J completed an acquisition of certain synthetic phage assets (the "synthetic phage assets") from Synthetic Genomics, Inc. ("SGI"). On December 20, 2018, the synthetic phage assets purchase agreement was amended, such that the purchase consideration consisted of (i) closing consideration of \$1.0 million paid on February 28, 2018, (ii) cash payments of \$1.0 million on January 31, 2019, \$1.0 million on January 31, 2020, and \$2.0 million on January 31, 2021, (iii) an issuance of that number of shares of C3J's common stock equal to ten percent of C3J's fully-diluted capitalization, excluding options and restricted stock awards, immediately prior to the closing of a business combination, and (iv) potential milestone payments of up to \$39.5 million related to the development and relevant regulatory approval of products utilizing bacteriophage from the synthetic phage assets acquired from SGI.

The present value of the time-based payment obligations was included in the Company's balance sheet, with interest accreted to the maturity date. The Company paid the last installment of the time-based payment obligation in the amount of \$2.0 million during the year ended December 31, 2021. For the year ended December 31, 2022 and 2021, the Company recognized \$0 and \$0.1 million of interest expense related to the time-based payment obligations, respectively.

10. Research Collaboration Arrangement

In connection with the Synthetic Phage Asset Acquisition discussed in Note 12, the Company was assigned a research collaboration agreement ("Research and Option Agreement") with Merck.

In May 2019, the Research and Option Agreement was amended and extended for four years. During the research term, the Company will be entitled to milestone payments tied to the achievement of product development milestone events in the amount of \$1.5 million. The collaboration agreement also provides for the initiation of a second research program should Merck exercise that option during the initial research term and pay the option fee of \$1.5 million. To date, Merck has not exercised its license option nor has the Company reached any milestones or earned any revenue under the Research and Option Agreement. Merck has the right to terminate the agreement at any time with 90 days' notice. Each party to the Research and Option Agreement is responsible for its costs and expenses in connection with the research program.

On December 14, 2022, the Company received a termination notice for the Research and Option Agreement effective March 14, 2023.

11. Grants and Awards

MTEC Grant

On June 15, 2020, the Company entered into an Research Project Award agreement (the "MTEC Agreement") with the Medical Technology Enterprise Consortium ("MTEC"), pursuant to which the Company will receive a \$15.0 million grant and entered into a three-year program administered by the U.S. Department of Defence (the "DoD") through MTEC with funding from the Defense Health Agency and Joint Warfighter Medical Research Program. On September 29, 2022, the MTEC Agreement was modified to increase the total award by \$1.3 million to \$16.3 million and extend the term into the third quarter of 2024. The MTEC funds are to partially fund a Phase 1b/2, randomized, double-blind, placebo-controlled, dose escalation clinical study of Armata's therapeutic phage-based candidate, AP-SA02, for the treatment of complicated *Staphylococcus aureus* bacteremia infections. The MTEC Agreement specifies that the grant will be paid to the Company over the term of the award through a cost reimbursable model, based on agreed upon cost share percentages, and the grant money received is not refundable to MTEC.

Upon license or commercialization of intellectual property developed with the funding from the MTEC Agreement, additional fees will be due to MTEC. The Company will elect whether to (a) pay a fixed royalty amount, which is subject to a cap based upon total funding received, or (b) pay an additional assessment fee, which would also be subject to a cap based upon a percentage of total funding received.

The MTEC Agreement will be effective through October 30, 2024. The MTEC Agreement may be terminated in whole or in part, 30 calendar days following the written notice from the Company to MTEC. In addition, MTEC has the right to terminate the MTEC Agreement upon material breach by the Company.

The Company determined that the MTEC Agreement is not in the scope of ASC 808 or ASC 606. Applying ASC 606 by analogy the Company recognizes proceeds received under the MTEC Agreement as grant revenue on the statement of operations when related costs are incurred. The Company recognized \$5.5 million and \$4.5 million in grant revenue from the MTEC Agreement during the year ended December 31, 2022 and 2021, respectively.

CFF Therapeutics Development Award

On March 13, 2020, the Company entered into an award agreement (the "Agreement") with CFF, pursuant to which it received a Therapeutics Development Award of up to \$5.0 million (the "Award"). The Award will be used to fund a portion of the Company's Phase 1b/2a clinical trial of the *P. aeruginosa* phage candidate, AP-PA02, as a treatment for *P. aeruginosa* airway infections in people with cystic fibrosis ("CF").

The first payment under the Agreement, in the amount of \$1.0 million, became due upon signing the Agreement and was received in April 2020. The remainder of the Award will be paid to the Company incrementally in installments upon the achievement of certain milestones related to the development program and progress of the Phase 1b/2a clinical trial of AP-PA02, as set forth in the Agreement.

If the Company ceases to use commercially reasonable efforts directed to the development of AP-PA02, or any other Product (as defined in the Agreement), for a period of 360 days (an “Interruption”) and fails to resume the development of the Product after receiving from CFF notice of an Interruption, then the Company must either repay the amount of the Award actually received by the Company, plus interest, or grant to CFF (1) an exclusive (even as to the Company), worldwide, perpetual, sublicensable license under technology developed under the Agreement that covers the Product for use in treating infections in CF patients (the “CF Field”), and (2) a non-exclusive, worldwide, perpetual, sublicensable license under certain background intellectual property covering the Product, to the extent necessary to commercialize the Product in the CF Field.

Upon commercialization by the Company of any Product, the Company will owe a fixed royalty amount to CFF, which is to be paid in installments determined, in part, based on commercial sales volumes of the Product. The Company will be obligated to make an additional fixed royalty payment upon achieving specified sales milestones. The Company may also be obligated to make a payment to CFF if the Company transfers, sells or licenses the Product in the CF Field, or if the Company enters into a change of control transaction.

The term of the Agreement commenced on March 10, 2020 and expires on the earlier of the date on which the Company has paid CFF all of the fixed royalty payments set forth therein, the effective date of any license granted to CFF following an Interruption, or upon earlier termination of the Agreement. Either CFF or the Company may terminate the Agreement for cause, which includes the Company’s material failure to achieve certain development milestones. The Company’s payment obligations survive the termination of the Agreement.

The Company concluded that the CFF Award is in the scope of ASC 808. Accordingly, as discussed in Note 3, the Company recognizes the award upon achievement of certain milestones as credits to research and development expenses. During year ended December 31, 2022 and 2021, the Company recognized \$1.0 million and \$2.8 million as credits to research and development expenses related to the CFF Award, respectively. In addition, the Company concluded under the guidance in ASC 730 that it does not have an obligation to repay funds received once related research and development expenses are incurred.

12. Stockholders’ Equity

The Company is authorized to issue one class of shares designated as “Common Stock”. The number of shares of common stock authorized to be issued is 217,000,000 shares.

Private Investments

On February 9, 2022, the Company entered into the February 2022 Securities Purchase Agreement to sell its common stock and warrants to Innoviva. The gross proceeds to the Company from the transaction were \$45 million, before deducting estimated offering expenses.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases were completed in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

On October 28, 2021, the Company entered into a securities purchase agreement (the “October 2021 Securities Purchase Agreement”) with the Cystic Fibrosis Foundation (“CFF”), a Delaware corporation, the Company’s partner for its lead Phase 1b/2a clinical development program, and Innoviva Strategic Opportunities LLC, a wholly-owned subsidiary of Innoviva, Inc. (Nasdaq: INVA) (collectively, “Innoviva”) for the private placement of newly issued shares of common stock, par value \$0.01 per share, of the Company (“Common Stock”). Pursuant to the October 2021 Securities Purchase Agreement, the Company issued and sold 909,091 shares to CFF and 1,212,122 shares to Innoviva,

each at a per share price of \$3.30 (the “October 2021 Private Placements”). The Company received aggregate gross proceeds from the October 2021 Private Placements of approximately \$7.0 million, before deducting transaction expenses.

On January 26, 2021, the Company entered into a securities purchase agreement (the “January 2021 Securities Purchase Agreement”) with Innoviva, pursuant to which the Company issued and sold to Innoviva, in a private placement, up to 6,153,847 newly issued shares of Common Stock, and warrants (the “Common Warrants”) to purchase up to 6,153,847 shares of Common Stock, with an exercise price per share of \$3.25 (the “January 2021 Private Placement”).

The warrants expire five years from the issuance date. The Company reviewed the authoritative accounting guidance and determined that the warrants meet the criteria to be accounted for as permanent equity.

Warrants

At December 31, 2022, outstanding warrants to purchase shares of common stock are as follows:

Shares Underlying Outstanding Warrants	Exercise Price	Expiration Date
1,183,491	\$ 5.60	October 16, 2023
993,139	\$ 2.87	February 11, 2025
7,717,661	\$ 2.87	March 27, 2025
1,867,912	\$ 3.25	January 26, 2026
4,285,935	\$ 3.25	March 16, 2026
1,807,396	\$ 5.00	February 8, 2027
2,692,604	\$ 5.00	March 30, 2027
1,200	\$ 1,680.00	None
20,549,338		

13. Stock-based Compensation

Stock Award Plans

The Company maintains a 2016 Equity Incentive Plan (the “2016 Plan”), which provides for the issuance of incentive share awards in the form of non-qualified and incentive stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards and performance-based stock awards. The awards may be granted by the Company’s Board of Directors to its employees, directors and officers and to consultants, agents, advisors and independent contractors who provide services to the Company or to a subsidiary of the Company. The exercise price for stock options must not be less than the fair market value of the underlying shares on the date of grant. Stock options expire no later than ten years from the date of grant and generally vest and typically become exercisable over a four-year period following the date of grant. Under the 2016 Plan, the number of shares authorized for issuance automatically increases annually beginning January 1, 2017 and through January 1, 2026.

The Company has issued restricted stock awards (“RSAs”) under certain legacy option plan that generally vest over two to four years based on service conditions. The RSAs began vesting in May 2019, and no additional awards will be issued under this legacy plan.

Stock-based Compensation

The Company estimates the fair value of stock options with performance and service conditions using the Black-Scholes valuation model. Compensation expense related to stock options granted is measured at the grant date based on the estimated fair value of the award and is recognized on the accelerated attribution method over the requisite service period.

The assumptions used in the Black-Scholes model for options granted during the year ended December 31, 2022 and 2021 are presented below:

	Year ended	
	December 31, 2022	December 31, 2021
Risk-free interest rate	2.65% - 4.20%	0.73% - 1.29%
Expected volatility	81.81% - 85.86%	84.07% - 93.37%
Expected term (in years)	5.50 - 7.00	5.50 - 7.00
Expected dividend yield	0%	0%

The risk-free interest rate is based on the U.S. Treasury yield for a period consistent with the expected term of the option in effect at the time of the grant. Expected volatility is based on an analysis of the historical volatility of Armata and peer companies' common stock. The expected term represents the period that the Company expects its stock options to be outstanding. The expected term assumption is estimated using the simplified method set forth in the U.S. Securities and Exchange Commission Staff Accounting Bulletin 110, which is the mid-point between the option vesting date and the expiration date. For stock options granted to parties other than employees or directors, the Company elects, on a grant by grant basis, to use the expected term or the contractual term of the option award. The Company has never declared or paid dividends on its common stock and has no plans to do so in the foreseeable future. Forfeitures are recognized as a reduction of stock-based compensation expense as they occur.

The tables below summarize the total stock-based compensation expense included in the Company's consolidated statements of operations for the periods presented:

	Year Ended December 31,	
	2022	2021
Research and development	\$ 1,794,000	\$ 1,505,000
General and administrative	1,311,000	1,377,000
Total stock-based compensation	<u>\$ 3,105,000</u>	<u>\$ 2,882,000</u>

Stock option transactions during the year ended December 31, 2022 are presented below:

	Options Outstanding			
	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2021	2,409,682	\$ 5.64	8.00	—
Granted	1,254,500	4.95		—
Exercised	(38,287)	3.29		\$ 44,000
Forfeited/Cancelled	(273,092)	6.94		—
Outstanding at December 31, 2022	<u>3,352,803</u>	<u>\$ 5.32</u>	<u>7.80</u>	<u>\$ —</u>
Vested and expected to vest at December 31, 2022	<u>3,352,803</u>	<u>\$ 5.32</u>	<u>7.80</u>	<u>\$ —</u>
Exercisable at December 31, 2022	<u>1,438,123</u>	<u>\$ 6.17</u>	<u>6.67</u>	<u>\$ —</u>

Restricted stock award transactions under the Assumed 2016 Plan and restricted stock unit award transactions during the year ended December 31, 2022 are presented below:

	Shares	Weighted Avg Grant Date Fair Value
Outstanding at December 31, 2021	154,018	\$ 27.49
Granted	—	—
Forfeited/Cancelled	(369)	31.85
Vested and Issued as Common Stock	(23,983)	32.88
Outstanding at December 31, 2022	<u>129,666</u>	<u>\$ 27.11</u>

The aggregate intrinsic value of options at December 31, 2022 is based on the Company's closing stock price on that date of \$1.24 per share. As of December 31, 2022, there was \$3.2 million of total unrecognized compensation expense related to unvested stock options and RSAs, excluding unvested RSAs with performance conditions deemed to be improbable for the period ended December 31, 2022, which the Company expects to recognize over the weighted average remaining period of 1.8 years.

Shares Reserved For Future Issuance

As of December 31, 2022, the Company had reserved shares of its common stock for future issuance as follows:

	Shares Reserved
Stock options outstanding	3,352,803
Unvested restricted stock units	30,000
Employee stock purchase plan	9,748
Available for future grants under the 2016 Plan	570,570
Warrants outstanding	20,549,338
Total shares reserved	<u>24,512,459</u>

14. Employee Retirement Plan

The Company's employees participate in an employee retirement plan under Section 401(k) of the Internal Revenue Code of 1986, as amended. All of the Company's employees who meet minimum eligibility requirements are eligible to participate in the plan. The Company did not make matching contributions to the 401(k) plan for the years ended December 31, 2022 and 2021.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and our principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance,

management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

As of December 31, 2022, our management, with the participation of our Chief Executive Officer and Vice President, Finance and Administration, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is accumulated and communicated to management, including our Chief Executive Officer and Vice President, Finance and Administration, as appropriate, to allow timely decisions regarding required disclosure. Based on this evaluation, our Chief Executive Officer and Vice President, Finance and Administration concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Exchange Act Rules 13a-15(f) and 15(d) -15(f) as a process designed by, or under the supervision of, our Chief Executive Officer and Vice President, Finance and Administration to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles.

Because of inherent limitations, internal controls over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

As of December 31, 2022, our management assessed the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013) (the "2013 Framework"). In adopting the 2013 Framework, management assessed the applicability of the principles within each component of internal control and determined whether or not they have been adequately addressed within the current system of internal control and adequately documented. Based on this assessment, management, under the supervision and with the participation of our Chief Executive Officer and Vice President, Finance and Administration, concluded that, as of December 31, 2022, our internal control over financial reporting was effective based on those criteria.

This Annual Report on Form 10-K does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. We were not required to have, nor have we, engaged our independent registered public accounting firm to perform an audit of internal control over financial reporting pursuant to SEC rules that permit us to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting.

An evaluation was also performed under the supervision and with the participation of our management, including our Chief Executive Officer and our Vice President, Finance and Administration, of any changes in our internal control over financial reporting that occurred during our last fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. There were no changes in our internal control

over financial reporting during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. OTHER INFORMATION

None.

Item 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

MANAGEMENT

The following table sets forth information about our executive officers and directors as of March 1, 2023.

Name	Age	Position(s)
Brian Varnum, Ph.D.	63	Chief Executive Officer
Mina Pastagia, M.D.	48	Chief Medical Officer
Erin Butler	44	Vice President, Finance and Administration
Non-Employee Directors		
Jules Haimovitz (3)(4)	72	Chairman of the Board of Directors
Odysseas D. Kostas, M.D. (3)(4)	48	Director
Robin C. Kramer (1)	57	Director
Joseph M. Patti, Ph.D.(2)(3)	58	Director
Todd C. Peterson, Ph.D. (1)	65	Director
Sarah J. Schlesinger, M.D.(2)	63	Director

(1) Member of the Audit Committee.

(2) Member of the Compensation Committee.

(3) Member of the Nominating and Corporate Governance Committee.

(4) Serves as a designee of Innoviva under the Investor Rights Agreement.

Brian Varnum, Ph.D. has served as our Chief Executive Officer since August 2021. Prior to that, he served as President and Chief Development Officer since the Merger. He previously served at C3J as its Vice President of Product Development starting in 2012 and became its Chief Development Officer in 2014, serving in that role until the Merger in May 2019. Dr. Varnum is a biotech veteran with more than 20 years of experience. Dr. Varnum began his career with Amgen Inc. and spent more than 18 years at the biotech pioneer as that company grew from a start-up to a large and successful biotechnology company. He started in discovery research where his team purified novel growth factors and advanced antibodies and small molecules into clinical studies. Dr. Varnum also worked in development, assisting with clinical development of proteins, antibodies and small molecules. In this capacity, he contributed to key regulatory filings, market research and product launch, giving him experience in drug discovery and development from the lab bench to product launch and marketing. After retiring from Amgen Inc. in 2007, Dr. Varnum turned his focus to the start-up landscape, working in several capacities, including assisting investors, entrepreneurs and start-ups in the assessment of technologies for funding or in-licensing. In these capacities, he established research strategies and plans, and served as Chief Scientific Officer for several companies, securing funding, and executing research contracts with large and mid-sized pharmaceutical companies. Dr. Varnum obtained his Ph.D. from UCLA studying oncogenes, and his drug development research experience includes hematopoietic growth factor discovery, oncology, auto-immune/inflammatory disorders, personalized medicine in inflammatory bowel disease and infectious diseases.

Mina Pastagia, M.D. has served as our Chief Medical Officer since January 2023. Prior to that, she served as Senior Vice President of Clinical Development since October 2020. Prior to joining Armata, Dr. Pastagia served as Senior Medical Director, Infectious Diseases and Vaccines at Janssen Biopharma, a member of the Janssen Pharmaceutical Companies of Johnson & Johnson. Since 2017, she led the design and execution of clinical trials for Janssen's antiviral, antibacterial and immunology assets, and served as clinical leader for Respiratory Syncytial Virus, hepatitis B, and pathogen-specific bacteriophage therapy for certain indications. Prior to Janssen, Dr. Pastagia served as Translational Medicine Leader in Infectious Diseases, Immunology and Inflammation at Hoffmann-La Roche. During that time, Dr. Pastagia served as antibiotic therapeutic head and leader of disease area strategy, as well as team lead for the development of baloxavir for influenza. Her prior experience also includes serving as Medical Director at Clinilabs, a global, full-service contract research organization, and as Associate Director of Clinical Development at ContraFect

Corporation, where she was responsible for the development of biologic anti-infectives, including bacteriophage lysin targeting *Staphylococcus aureus* bacteremia. Prior to ContraFect, Dr. Pastagia served as an Instructor of Clinical Investigation in Bacterial Pathogenesis and Immunology at The Rockefeller University. Dr. Pastagia previously held adjunct appointments in the Division of Microbiology at The Rockefeller University and in the Division of Infectious Diseases at Weill Cornell Medical Center.

Dr. Pastagia is board certified in Internal Medicine and Infectious Disease, and is also a registered pharmacist in the State of New York. She received her medical degree from SUNY Downstate Medical Center, completed her internship and residency in internal medicine at Boston University, and completed her fellowship in infectious diseases at Mount Sinai Medical Center. Most recently she earned her Master's degree in Clinical and Translational Science from The Rockefeller University. Dr. Pastagia is a member of the Infectious Diseases Society of America (IDSA), American Society for Microbiology (ASM), the Association for Clinical and Translational Science (ACTS), and the Network on Antimicrobial Resistance in *S. aureus* (NARSA).

Erin Butler has served as our Vice President of Finance and Administration since March 2022 and prior to her appointment, she served as our Senior Director, Corporate Controller since September 2017. From June 2016 to September 2017, Ms. Butler served as Assistant Controller of Inovio, Inc., a publicly traded biotechnology company focused on developing and commercializing DNA medicines for protection from infectious diseases and treatment of various cancers and HPV-associated diseases. Ms. Butler's previous experience includes serving as Assistant Controller of Apricus Biosciences, a publicly traded pharmaceutical company focused on innovative medicines in urology and rheumatology, and as an auditor for Deloitte and Touche, LLP, a public accounting firm.

Non-Employee Directors

Jules Haimovitz joined the board of directors of Armata Pharmaceuticals in April 2021, and in June 2021 was elected as the Company's Chairman of the Board. At Innoviva, Inc. (NASDAQ: INVA), a company with a portfolio of royalties that include respiratory assets partnered with Glaxo Group Limited, Mr. Haimovitz has served as a member of the Board of Directors since February 2018 and is currently a member of the Audit Committee, the chair of the Compensation Committee and a member of the Nominating/Corporate Governance Committee. Mr. Haimovitz is currently President of Haimovitz Consulting, Inc. He previously served as a member of the board of directors of Ariad Pharmaceuticals, where he was also a member of its audit committee; Dial Global, Inc., where he was also member of its audit committee; and Imclone Pharmaceuticals, where he served as chairperson of its audit committee. Mr. Haimovitz has also served as Chief Executive Officer or Chief Operating Officer of the following companies: Spelling Entertainment, Inc., King World Productions and VJN, Inc. Mr. Haimovitz holds a B.S. and M.A. degree in Mathematics from Brooklyn College.

Director Qualifications. Mr. Haimovitz was selected as a director because of his extensive leadership experience with biotechnology companies and his in-depth knowledge of the industry, as well as his experience serving on the boards of directors of various public and private companies.

Odysseas D. Kostas has served as a member of our board of directors since February 2020. He also currently serves as a director of Innoviva, Inc. He is a Partner and Senior Managing Director at Sarissa Capital Management LP. Sarissa Capital focuses on improving the strategies of companies to enhance stockholder value. Prior to joining Sarissa Capital, Dr. Kostas served as a Director at Evercore ISI (formerly ISI), covering the biotechnology and pharmaceutical industries. Previously, he practiced internal medicine as part of the Yale New Haven Health System and was engaged as a consultant to various biotechnology companies. Dr. Kostas also previously served on the board of directors of Enzon Pharmaceuticals. Dr. Kostas has a B.S. from Massachusetts Institute of Technology (MIT) and a M.D. from University of Texas Southwestern Medical School. Dr. Kostas has demonstrated leadership in his field, and his knowledge of and experience in our industry contributed to our conclusion that he should serve as a director.

Director Qualifications. Dr. Kostas was selected as a director because of his extensive leadership experience with biotechnology companies and his in-depth knowledge of our business, strategy and management team, as well as his experience serving as a public company director.

Robin C. Kramer has served as Senior Vice President, Chief Accounting Officer and Head of Global Business Services and Treasury of Biogen, a biopharma company, since January 2021. Ms. Kramer served as Biogen's Vice President, Chief Accounting Officer from November 2018 to December 2020. Prior to joining Biogen, Ms. Kramer served as the Senior Vice President and Chief Accounting Officer of Hertz Global Holdings, Inc., a car rental company, from May 2014 to November 2018. Prior to that, Ms. Kramer was an audit partner at Deloitte & Touche LLP (Deloitte), a professional services firm, from 2007 to 2014, including serving in Deloitte's National Office Accounting Standards and Communications Group from 2007 to 2010. From 2005 to 2007 Ms. Kramer served as Chief Accounting Officer of Fisher Scientific International, Inc., a laboratory supply and biotechnology company, and from 2004 to 2005 Ms. Kramer served as Director, External Reporting, Accounting and Control for the Gillette Company, a personal care company. Ms. Kramer also held partner positions in the public accounting firms of Ernst & Young LLP and Arthur Andersen LLP. Ms. Kramer is a licensed certified public accountant (CPA) in Massachusetts. She is a member of the Massachusetts Society of CPAs and the American Institute of CPAs. She has served as a Board member of the Center for Women and Enterprise from August 2020 – Present. She previously served as a Board Member of Samsung Bioepis Co., LTD. from July 2020 to April 2022, the Massachusetts State Board of Accountancy from September 2011 to December 2015 and Probus Insurance Company Europe DAC, from 2016 to 2018.

Director Qualifications. Ms. Kramer was selected as a director because of her years of experience in biotechnology and life sciences research and development and her in-depth knowledge of the industry. She has financial expertise, including a thorough understanding of financial statements, corporate finance and accounting and extensive experience with public companies, all of which makes her a valued member of the board of directors.

Joseph M. Patti, has served as a member of the board of directors since the consummation of the Merger in May 2019. In June 2022, Dr. Patti was appointed President and Chief Executive Officer and director of Evexia Therapeutics, Inc., and since February 2018, has been the President of JP Biotech Advisors, Inc., which provides strategic growth and drug development advice to emerging biotechnology companies. Dr. Patti was Executive Chairman of AgilVax, Inc. from November 2018 until August 2019, when he was appointed President and Chief Executive Officer and director, until July 2021. From November 2012, Dr. Patti served as Aviragen Therapeutics, Inc.'s Executive Vice President of Corporate Development and Strategy until October 2014, when he was appointed the company's President and Chief Executive Officer and director. He served in those roles until February 2018, when Aviragen merged with Vaxart, Inc. Prior to joining Aviragen, Dr. Patti co-founded Inhibitex, Inc. in 1994 and served as its Chief Scientific Officer and Senior Vice President of Research and Development from 2007 until it was acquired by Bristol Myers Squibb in February 2012. He also served as its Chief Scientific Officer and Vice President of Research and Development from 2005 to 2007 and as Vice President, Preclinical Development prior to that. Dr. Patti was a director of Inhibitex from 1998 to 2005. Before co-founding Inhibitex, Dr. Patti was an Assistant Professor at Texas A&M's Institute of Biosciences and Technology and served on the faculty at the University of Texas Health Science Center Graduate School of Biomedical Sciences. Dr. Patti received a B.S. in Microbiology from the University of Pittsburgh, a M.S.P.H. from the University of Miami, School of Medicine, and a Ph.D. in Biochemistry from the University of Alabama at Birmingham. Dr. Patti was a director of SciStem Therapeutics, Inc., a privately held biotechnology company from 2012 to 2015.

Director Qualifications. Dr. Patti was selected as a director because of his scientific knowledge and background and experience in developing numerous preclinical and clinical biopharmaceutical product candidates, as well as his senior management experience over the past decade in developing and implementing the business and financial strategies of emerging, publicly-traded biopharmaceutical companies and serving as a public company director.

Todd C. Peterson has served as a member of the board of directors since October 2019. Dr. Peterson is Founder and Principal at GenApex Bio (GenApex Biotechnology Consulting), a board practice, investment and advisory services LLC based in Coronado, California. He has over 35 years of experience in biotechnology and life sciences research and development across the areas of molecular and cell biology, nucleic acids and genomics product and technology development. His experience encompasses clinical diagnostics, life science research tools and drug discovery technologies, products, and markets. Previously, Dr. Peterson was Chief Scientific Officer at The Allen Institute in

Seattle, Washington, overseeing science and technology strategy and growth initiatives across unit Institutes for Brain Science, Cell Science, Immunology, and the Paul G. Allen Frontiers Group. Prior to joining the Allen Institute, Dr. Peterson was Chief Technology Officer at Synthetic Genomics, Inc., a leader in synthetic biology and applied genomics technologies developing a robust portfolio of breakthrough solutions addressing major global issues. Prior to joining SGI, Dr. Peterson led Genomics and Synthetic Biology R&D at Invitrogen/Life Technologies (now Thermo Fisher Scientific), a global leader in life science tools. Prior to Life Technologies, Dr. Peterson held R&D positions with increasing leadership responsibilities and scope at Genicon Sciences, Trega Biosciences, Hybritech and Gen-Probe where he focused on technology research, product development and commercialization. Dr. Peterson was a postdoctoral fellow at the Max Planck Institute in Cologne Germany after receiving his Ph.D. in Microbiology at the University of Southern California School of Medicine. He obtained his M.A. in Biological Sciences and B.A. in Molecular Biology and Biochemistry at the University of California, Santa Barbara. Dr. Peterson is co-founder of Barrier Bio, serves on numerous Scientific Advisory Boards, and serves on the Board of Directors of: Molecular Assemblies, NanoCollect BioMedical, Inc. and the Center of Excellence for Engineering Biology.

Director Qualifications. Dr. Peterson was selected as a director because of his years of experience in biotechnology and life sciences research and development, his in-depth knowledge of the industry and pre-clinical / early-stage scientific requirements, and his experience and understanding of our bacteriophage platform.

Sarah J. Schlesinger, M.D. has served as a member of our board of directors since February 2020. She also currently serves as a member of the board of directors of Innoviva, Inc., and serves on its Compensation Committee and is the chairperson of the Nominating/Corporate Governance Committee. Dr. Schlesinger is an Associate Professor of Clinical Investigation at Rockefeller University and Senior Attending Physician at Rockefeller University Hospital. Dr. Schlesinger was The Clinical Director of the laboratory of Dr. Ralph Steinman (Nobel Laureate 2011) from 2002 until his death in 2011. Dr. Schlesinger led the Dendritic Cell section of the Division of Retrovirology at the Walter Reed Army Institute of Research and was also a member of the Division of Infectious and Parasitic Disease Pathology at the Armed Forces Institute of Pathology from 1994 to 2002. In 2002, Dr. Schlesinger rejoined Rockefeller University and began working with the International AIDS Vaccine Initiative as a Scientist in Vaccine Research and Design. Dr. Schlesinger has been a member of Rockefeller University Hospital's Institutional Review Board ("Rockefeller IRB") (Ethics Committee) since 2003 and previously served as Rockefeller IRB's vice-chairperson. In 2017 she assumed the position of chairperson of the Rockefeller IRB. She is currently the director of the education and training programs at Rockefeller University Center for Clinical and Translational Science. Dr. Schlesinger currently serves on the board of two non-profit organizations: the AIDS Vaccines Advocacy Coalition, and The Hastings Center, the pre-eminent center for the study of bioethics. Dr. Schlesinger served as an independent corporate director of Ariad Pharmaceuticals from 2013 until its sale to Takeda Pharmaceutical Company Limited in 2017. She also served as an independent corporate director of The Medicines Company from 2018 until its acquisition by Novartis in 2020. Dr. Schlesinger has a B.A. from Wellesley College and a M.D. from Rush Medical College in Chicago, Illinois. She trained in Anatomic Pathology at The New York Hospital where she served as Chief Resident. Dr. Schlesinger has demonstrated leadership in her field and her substantial knowledge of our industry contributed to our conclusion that she should serve as a director.

Director Qualifications. Dr. Schlesinger was selected as a director because of her extensive leadership experience with biotechnology companies and her in-depth knowledge of the industry, as well as her experience serving on the boards of directors of various public and private companies.

Our Nominating and Corporate Governance Committee seeks to assemble a board of directors ("Board of Directors") that, as a whole, possesses the appropriate balance of professional and industry knowledge, financial expertise and high-level management experience necessary to oversee and direct our business. To that end, the Nominating and Corporate Governance Committee has identified and evaluated nominees in the broader context of the Board of Directors' overall composition, with the goal of recruiting members who complement and strengthen the skills of other members and who also exhibit integrity, collegiality, sound business judgment and other qualities that the Nominating and Corporate Governance Committee views as critical to effective functioning of the Board of Directors. The brief biographies below include information regarding the specific and particular experience, qualifications, attributes or skills of each nominee that led the Nominating and Corporate Governance Committee to recommend that person as a nominee. However, each of the members of the Nominating and Corporate Governance Committee may have

a variety of reasons why he or she believes a particular person would be an appropriate nominee for the Board of Directors, and these views may differ from the views of other members.

Board Composition

Our business and affairs are organized under the direction of our Board of Directors, which currently consists of eight members. The primary responsibilities of our board of directors are to provide oversight, strategic guidance, counseling and direction to our management. Our Board of Directors meets on a regular basis and on an ad hoc basis as required.

As required under the NYSE American exchange listing standards, a majority of the members of a listed company's board of directors must qualify as "independent," as affirmatively determined by the board of directors. Our Board of Directors consults with our counsel to ensure that the board of directors' determinations are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent listing standards of the NYSE American exchange, as in effect from time to time.

Consistent with these considerations, after review of all relevant identified transactions or relationships between each director, or any of his or her family members, and us, our senior management and our independent auditors, the board affirmatively determined that Jules Haimovitz, Odysseas D. Kostas, M.D., Robin C. Kramer, Joseph M. Patti, Ph.D., Todd C. Peterson, Ph.D., and Sarah J. Schlesinger, M.D. and are independent directors within the meaning of the applicable NYSE American exchange listing standards. In making this determination, our Board of Directors found that none of these directors or nominees for director had a material or other disqualifying relationship with us. The Board of Directors concluded that Dr. Varnum is not an independent director within the meaning of the applicable NYSE American exchange listing standards. Dr. Varnum is not independent director under these rules given their role as our Chief Executive Officer.

As required under applicable NYSE American rules, our independent directors meet in regularly scheduled executive sessions at which only independent directors are present.

Our amended and restated bylaws provide that the Board of Directors will consist of not less than one nor more than nine members, as fixed from time to time by a resolution of the Board of Directors. The authorized size of our board of directors is currently eight members.

Board Leadership Structure

Our Board of Directors has an independent Chairman, Jules Haimovitz, who has authority, among other things, to call and preside over meetings of the Board of Directors, to set meeting agendas and to determine materials to be distributed to the Board of Directors. Accordingly, the Chairman has substantial ability to shape the work of the Board of Directors. We have a separate chair for each committee of the Board of Directors. As a general policy, the Board of Directors believes that separation of the positions of Chairman and Chief Executive Officer reinforces the independence of the Board of Directors from management, creates an environment that encourages objective oversight of management's performance and enhances the effectiveness of the Board of Directors as a whole. We expect and intend the positions of Chairman of the Board of Directors and Chief Executive Officer to continue to be held by separate individuals in the future.

Role of the Board in Risk Oversight

One of the principal functions of our Board of Directors is to provide oversight concerning the assessment and management of risk related to our business. The Board of Directors is involved in risk oversight through direct decision-making authority with respect to fundamental financial and business strategies and major corporate activities.

While the Board of Directors oversees our risk management, our management is responsible for day-to-day risk management processes, including, without limitation, strategic, operational, financial, regulatory and cyber-security risks that may exist from time to time. The Board of Directors expects management to consider the risks of, and risk

management in, each business decision, to proactively develop and monitor risk management strategies and processes for day-to-day activities and to effectively implement risk management strategies adopted by the Board of Directors and its committees. In connection with this responsibility, members of management provide regular reports to the Board of Directors regarding business operations and strategic planning, financial planning and budgeting and regulatory matters, including any material risk to our company related to such matters. Although the Board of Directors does not have a formal risk oversight policy, the Board of Directors does, as a whole and through its various committees, oversee the proper functioning of our internal risk management processes. In its risk oversight role, the Board of Directors evaluates whether management has reasonable controls in place to address material risks we currently face and those we may face in the future.

The Board of Directors has delegated oversight for specific areas of risk exposure to committees of the Board of Directors as follows:

- The Audit Committee is primarily responsible for overseeing our financial risk management processes on behalf of the Board of Directors. The Audit Committee is responsible for discussing our overall risk assessment and risk management policies with management and our independent registered public accounting firm, as well as our plans to monitor and control any financial risk exposure. The Audit Committee is also responsible for primary risk oversight related to our internal control over financial reporting, disclosure controls and procedures, and legal and regulatory compliance. In addition, the Audit Committee reviews all related-person transactions, including the risks related to those transactions impacting our company. Going forward, we expect that the Audit Committee will receive reports from management regarding its assessment of risks at least quarterly.
- The Compensation Committee oversees our compensation programs and reviews the conduct incentivized by those programs, including any impact on risk-taking by our executive officers and employees.
- The Nominating and Corporate Governance Committee oversees the organization, membership and structure of our Board of Directors and our corporate governance practices. The committee members report to the full Board of Directors on material developments in their areas of oversight.

We believe this division of responsibilities is the most effective approach for addressing the risks we face and that our Board of Directors' leadership structure, which also emphasizes the independence of our Board of Directors in its oversight of our business and affairs, supports this approach.

The Board of Directors and its committees meet at regularly scheduled and special meetings throughout the year at which management reports to the board concerning the results of our risk management activities, as well as external changes that may change the levels of business risk to which we are exposed. At each regular meeting of our Board of Directors, the chairperson of each committee reports to the full board regarding the matters reported and discussed at any committee meetings, including any matters related to risk assessment or risk management. Upon the request of the committees, our principal executive officer and principal financial officer attend meetings of these committees when they are not in executive session, and often report on matters that may not be otherwise addressed at these meetings. In addition, our directors are encouraged to communicate directly with members of management regarding matters of interest, including matters related to risk, at times when meetings are not being held.

In connection with the ongoing COVID-19 pandemic, the Audit Committee and management, has monitored our efforts to mitigate business continuity, financial, human capital, and cybersecurity risk exposures associated with the pandemic.

Board Committees

The Board of Directors has an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. Each of the Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee operates under a written charter, the adequacy of which each respective committee regularly reviews and reassesses. A copy of each charter is available under the heading "Corporate Governance" of the Investor

Relations section of our website at <https://investor.armatapharma.com/corporate-governance>. Our board of directors may establish additional committees from time to time in accordance with our bylaws.

Below is a description of each committee of the Board of Directors. The Board of Directors has determined that each member of each committee meets the applicable NYSE American exchange rules and regulations regarding “independence” and each member is free of any relationship that would impair the member’s individual exercise of independent judgment with regard to our Company.

Audit Committee

The Board of Directors reviews the NYSE American exchange listing standards definition of independence for Audit Committee members on an annual basis and has determined that each of the members of our Audit Committee as of the record date satisfies the NYSE American exchange listing requirements and SEC independence requirements.

Our Audit Committee consists of Robin C. Kramer (chair) and Todd C. Peterson. Our Board of Directors has determined that Ms. Kramer qualifies as an audit committee financial expert within the meaning of SEC regulations. In making this determination, our Board of Directors has considered Ms. Kramer’s formal education and previous and current experience in financial roles. Both our independent registered public accounting firm and management periodically meet privately with our Audit Committee.

The primary purpose of the Audit Committee is to oversee our corporate accounting and financial reporting processes and audits of its financial statements. The functions of the Audit Committee include, among other things:

- evaluating the performance, independence and qualifications of our independent auditors and determining whether to retain our existing independent auditors or engage new independent auditors and to present its conclusion to our Board of Directors;
- reviewing and approving the engagement of our independent auditors to perform audit services and any permissible non-audit services;
- monitoring the rotation of partners of our independent auditors on our audit engagement team as required by law;
- prior to engagement of any independent auditor, and, at least annually thereafter, reviewing relationships that may reasonably be thought to bear on the auditor’s independence, and assessing and otherwise taking the appropriate action to oversee the independence of our independent auditor;
- reviewing our annual and quarterly financial statements and reports, including disclosures relating to Environmental, Social, and Governance (“ESG”) and disclosures contained under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and discussing the statements and reports with our independent auditors and management;
- reviewing with our independent auditors and management critical audit matters and significant issues that arise regarding accounting principles and financial statement presentation and matters concerning the scope, adequacy and effectiveness of our internal control over financial reporting;
- reviewing with management and our auditors any earnings announcements and other public announcements regarding material developments;
- establishing procedures for the receipt, retention and treatment of complaints received by us regarding internal accounting controls, accounting or auditing matters and other matters;
- preparing the report that the SEC requires in our annual proxy statement;

- reviewing and providing oversight of any related-person transactions in accordance with our related-person transactions policy and reviewing and monitoring compliance with legal and regulatory responsibilities, including our code of business conduct and ethics;
- reviewing on a periodic basis our investment policy; and
- reviewing and evaluating on an annual basis its own performance, including its compliance with its charter.

Compensation Committee

Our Compensation Committee consists of Dr. Patti (Chair) and Dr. Schlesinger. Our Board of Directors has determined that each of the members of our Compensation Committee is a non-employee director, as defined in Rule 16b-3 promulgated under the Exchange Act, an outside director, as defined pursuant to Section 162(m) of the Code, and satisfies the NYSE American exchange listing independence requirements.

The functions of this committee include, among other things:

- reviewing, modifying and approving (or, if it deems appropriate, making recommendations to the full Board of Directors regarding) our overall compensation strategy and policies;
- reviewing and approving (or, if it deems appropriate, making recommendations to the full Board of Directors regarding) the compensation and other terms of employment of our executive officers, including the terms of any employment agreements, severance arrangements, change-of-control protections and any other compensatory arrangements for our executive officers;
- reviewing and approving (or, if it deems appropriate, making recommendations to the full Board of Directors regarding) performance goals and objectives relevant to the compensation of our executive officers and assessing their performance against these goals and objectives;
- reviewing and approving (or, if it deems appropriate, making recommendations to the full Board of Directors regarding) the equity incentive plans, compensation plans and similar programs advisable for us, as well as modifying, amending or terminating existing plans and programs;
- evaluating (including, if it deems appropriate, with the input of some or all of the other members of the Board of Directors) risks associated with our compensation policies and practices and assessing whether risks arising from our compensation policies and practices for our employees are reasonably likely to have a material adverse effect on us;
- reviewing and making recommendations to the full board of directors regarding the type and amount of compensation to be paid or awarded to our non-employee board members;
- administering our equity incentive plans;
- establishing policies with respect to equity compensation arrangements;
- establishing policies with respect to votes by our stockholders to approve executive compensation as required by Section 14A of the Exchange Act and determining our recommendations regarding the frequency of advisory votes on executive compensation, to the extent required by law;
- reviewing and assessing the independence of compensation consultants, legal counsel and other advisors as required by Section 10C of the Exchange Act;

- reviewing the competitiveness of our executive compensation programs and evaluating the effectiveness of our compensation policy and strategy in achieving expected benefits to us;
- reviewing the adequacy of its charter on a periodic basis;
- reviewing with management and approving our compensation-related disclosures and related tables in our periodic reports or proxy statements to be filed with the SEC;
- preparing the report that the SEC requires in our annual proxy statement, if required by then-applicable SEC rules; and
- reviewing and assessing on an annual basis its own performance.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee consists of Mr. Haimovitz (Chair) Dr. Kostas and Dr. Patti. Our board of directors has determined that each of the members of this committee satisfies the NYSE American exchange listing independence requirements.

The Nominating and Corporate Governance Committee of the Board of Directors is responsible for, among other things:

- identifying, reviewing and evaluating candidates to serve on our Board of Directors consistent with criteria approved by our Board of Directors;
- assessing the performance of management and the Board of Directors, including board committees, seeking input from senior management, the full Board of Directors and others, which assessment shall include, among other things, an evaluation of the Board of Directors' contribution as a whole and overall Board of Directors composition and makeup, including the reelection of current Board of Directors members;
- evaluating, nominating and recommending individuals for membership on our Board of Directors;
- evaluating nominations by stockholders of candidates for election to our Board of Directors;
- considering and assessing the independence of members of our Board of Directors;
- developing a set of corporate governance policies and principles, periodically reviewing and assessing these policies and principles and their application and recommending to our Board of Directors any changes to such policies and principles;
- reviewing the adequacy of its charter on an annual basis; and
- reviewing and assessing on an annual basis its own performance.

Limitation of Liability and Indemnification

Sections 23B.08.510 and 23B.08.570 of the Washington Business Corporation Act authorize Washington corporations to indemnify directors and officers under certain circumstances against expenses (including legal expenses) and liabilities incurred in legal proceedings in which they are involved by reason of being a director or officer, as applicable. Section 23B.08.560 of the Washington Business Corporation Act authorizes a corporation, if authorized by its articles of incorporation or by a provision in the corporation's bylaws approved by its stockholders, to indemnify or agree to indemnify a director made a party to a proceeding, or obligate itself to advance or reimburse expenses incurred in a proceeding, without regard to the limitations imposed by Sections 23B.08.510 through 23B.08.550; provided that no

such indemnity shall indemnify any director from or on account of (a) acts or omissions of the director finally adjudged to be intentional misconduct or a knowing violation of law, (b) conduct of the director finally adjudged to be in violation of Section 23B.08.310 of the Washington Business Corporation Act (which section relates to unlawful distributions) or (c) any transaction with respect to which it was finally adjudged that such director personally received a benefit in money, property or services to which the director was not legally entitled.

Article 11 of our current articles of incorporation, provides that, to the fullest extent that the Washington Business Corporation Act permits the limitation or elimination of the liability of a director, a director shall not be liable to us or our stockholders for monetary damages for conduct as a director. Section 10 of our amended and restated bylaws requires us to indemnify every present or former director or officer against expenses, liabilities and losses incurred in connection with serving as a director or officer, as applicable, and to advance expenses of such director or officer incurred in defending any proceeding covered by the indemnity.

We maintain a policy of directors' and officers' liability insurance that insures the directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances. We have also entered into indemnification agreements with our executive officers and directors that provide for the indemnification of directors and executive officers to the fullest extent permitted by the Washington Business Corporation Act against expenses reasonably incurred by such persons in any threatened, pending or completed action, suit, investigation or proceeding in connection with their service as (i) a director or officer or (ii) a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, at our request. In addition, the indemnification agreements we are obligated to advance expenses pursuant to the indemnification agreements under certain circumstances and the agreements also provide for procedural protections, including a determination by a reviewing party as to whether the indemnitee is permitted to be indemnified under applicable law. In addition, we have agreed that we will be the indemnitor of first resort should the indemnitee have rights to indemnification provided by other persons.

The limitation of liability and indemnification provisions in our articles of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

We believe that these provisions in our articles of incorporation and amended and restated bylaws and our indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

At present, there is no pending litigation or proceeding involving any of our directors or executive officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Code of Ethics

We have adopted a code of ethics for directors, officers (including our principal executive officer and principal financial and accounting officer) and employees, known as the Code of Business Conduct and Ethics. The Code of Business Conduct and Ethics is available at our website at <https://www.armatapharma.com> under the Corporate Governance section of our Investor Relations page. We will promptly disclose on our website (i) the nature of any amendment to the Code of Business Conduct and Ethics that applies to our principal executive officer, principal financial and accounting officer, or persons performing similar functions and (ii) the nature of any waiver, including an implicit waiver, from a provision of the Code of Business Conduct and Ethics that is granted to one of these specified individuals that is required to be disclosed pursuant to SEC rules and regulations, the name of such person who granted the waiver, and the date of the waiver.

DELINQUENT SECTION 16(A) REPORTS

Section 16(a) of the Exchange Act requires our directors, executive officers and any persons beneficially holding more than 10% of our common stock to report their initial ownership of our common stock and any subsequent changes in that ownership to the SEC. Our executive officers, directors and greater than 10% stockholders are required by SEC regulation to furnish us with copies of all Section 16(a) forms they file.

Specific due dates for these reports have been established and we are required to identify those persons who failed to timely file these reports. To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations from our directors and officers that no other reports were required, during the fiscal year ended December 31, 2022, all of our directors, officers and greater than 10% stockholders complied with the Section 16(a) filing requirements.

Item 11. EXECUTIVE COMPENSATION

Set forth below is certain information regarding the historical compensation of our named executive officers during the year ended December 31, 2022 and 2021. For additional information about our current officers and directors, see the section titled “Management.”

Executive Compensation

The named executive officers as of December 31, 2022 were:

- Brian Varnum, Ph.D., Chief Executive Officer;
- Mina Pastagia, M.D., Senior Vice President, Clinical Development
- Erin Butler, Vice President, Finance and Administration

Summary Compensation Table

The following table provides information regarding the compensation paid during the last two fiscal years to the named executive officers.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$) (1)	Non-Equity Incentive Plan Compensation (\$)	All Other Compensation (\$)	Total (\$)
Brian Varnum, Ph. D.	2022	525,000	210,000	904,908	—	—	1,639,908
Chief Executive Officer	2021	463,688	231,844	780,403	—	—	1,475,935
Mina Pastagia, M.D.	2022	420,000	117,600	301,636	—	—	839,236
Senior Vice President, Clinical Development ⁽²⁾	2021	—	—	—	—	—	—
Erin Butler	2022	275,000	66,000	188,522	—	—	529,522
Vice President, Finance & Administration ⁽³⁾	2021	—	—	—	—	—	—
Steve Martin	2022	389,340	—	—	—	—	389,340
Former Chief Financial Officer ⁽⁴⁾	2021	370,800	148,320	135,685	—	—	654,805

- (1) In accordance with SEC rules, this column represents the aggregate grant date fair value of the option awards granted during 2022 and 2021 computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718 for stock-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 13 to the consolidated financial statements included in this Annual Report. These

amounts do not reflect the actual economic value that will be realized by the named executive officer upon the vesting of the stock options, the exercise of the stock options, or the sale of the common stock underlying such stock options.

- (2) Dr. Pastagia was appointed Chief Medical Officer in January 2023. Prior to that, she served as Senior Vice President of Clinical Development since October 2020. See the section “*Agreements with our Named Executive Officers*” for the terms of her compensation.
- (3) Ms. Butler was appointed to serve as Vice President, Finance and Administration on April 1, 2022 and Principal Financial and Accounting Officer effective July 1, 2022. Prior to her appointments, Ms. Butler served as the Company’s Senior Director, Corporate Controller since 2017. See the action *Agreements with our Named Executive Officers* for the terms of her compensation.
- (4) Mr. Martin retired from his role as Chief Financial Officer on June 30, 2022. See the section *Agreements with our Named Executive Officers* for terms of his advisory compensation subsequent to June 30, 2022.

Base Salary

The base salaries of the named executive officers in 2022, as applicable, were generally determined and approved by the board of directors, based on the recommendation of the Compensation Committee.

- Dr. Varnum’s annual base salary for 2022 was \$525,000.
- Dr. Pastagia’s annual base salary for 2022 was \$420,000.
- Ms. Butler’s annual base salary was \$230,000 for the period January 1, 2022 through March 31, 2022. Effective April 1, 2022 with the promotion to Vice President, Finance and Administration, Ms. Butler’s annual base salary was adjusted to \$290,000.

Annual Bonus

In addition to base salaries, the named executive officers are eligible to receive annual performance-based cash bonuses, which are designed to provide appropriate incentives to our executives to achieve defined annual corporate goals and to reward our executives for individual achievement towards these goals. The performance-based bonus generally is based on the extent to which we achieved the specified corporate goals that our board of directors or Compensation Committee established. After the end of the year, the board of directors and/or Compensation Committee review our performance against the established corporate goals and approve the extent to which we achieved such goals.

Under the terms of his amended offer letter agreement described below, Dr. Varnum was eligible to receive an annual performance-based bonus for 2022 equal to, at target, 50% of his earned salary based on our achievement of certain performance goals. Dr. Pastagia was eligible to receive an annual performance-based bonus for 2022 equal to, at target, 35% of her annual salary based on our achievement of certain performance goals. Ms. Butler was eligible to receive an annual performance-based bonus for 2022 equal to, at target, 30% of her annual salary based on our achievement of certain performance goals.

The annual performance-based bonus opportunities are based entirely on the extent to which we achieved corporate goals relating to capital raising, partner and grant funding and progress with clinical development and manufacturing for the fiscal years ending December 31, 2022. The corporate goals were established so that target attainment is not assured. Instead, our executives are required to demonstrate significant effort, dedication, and achievement to attain payment for performance at target or above.

In December 2022, the Compensation Committee reviewed performance results against the corporate goals and made a recommendation, that the board approved to authorize payout for the 2022 performance-based bonuses at the 80% achievement level. As a result, the named executive officers received the following performance-based bonuses for

2022: Dr. Varnum - \$210,000; Dr. Pastagia - \$117,600, and Ms. Butler - \$66,000. Mr. Martin retired from his position as Chief Financial Officer on June 30, 2022 and was not eligible to receive a 2022 performance-based bonus. These amounts are listed in the “Bonus” column of the Summary Compensation Table.

Equity-Based Awards

Our equity-based incentive awards were designed to align our interests with those of our employees and consultants, including the named executive officers. Our board of directors or our Compensation Committee approve equity grants. Vesting of equity awards was generally tied to continuous service and serves as an additional retention measure. Our executives may have been awarded an initial new hire grant upon commencement of service and have received additional grants, as the board of directors or Compensation Committee determined appropriate, in order to incentivize and/or reward such executives.

We traditionally granted stock options to the named executive officers under our equity incentive plans. Please see “Outstanding Equity Awards at Fiscal Year End” below.

Agreements with our Named Executive Officers

Below are descriptions of our employment agreements with the named executive officers governing the terms of their service with us. For a discussion of the severance pay and other benefits that may be provided in connection with a termination of service and/or a change in control under the arrangements with the named executive officers, please see “Payments and Benefits upon Termination or Change in Control” below.

On August 1, 2021, the Company and Dr. Varnum entered into an amended employment agreement. Dr. Varnum’s employment under the agreement is at will and is terminable by us or Dr. Varnum at any time. Under the terms of the agreement, Dr. Varnum currently receives an annual base salary of \$525,000 which may be further adjusted from time to time by the board of directors, and an annual target performance bonus of 50% of his annual salary based on our achievement of certain performance objectives. Dr. Varnum is also entitled to certain severance benefits as described below under the section entitled “Payments and Benefits upon Termination or Change in Control.”

On October 15, 2020, the Company and Dr. Pastagia entered into an employment agreement. Dr. Pastagia’s employment under the agreement is at will and is terminable by us or Dr. Pastagia at any time. Under the terms of the agreement, Dr. Pastagia currently receives an annual base salary of \$420,000 which may be further adjusted from time to time by the board of directors, and an annual target performance bonus of 35% of her annual salary based on our achievement of certain performance objectives. Dr. Pastagia is also entitled to certain severance benefits as described below under the section entitled “Payments and Benefits upon Termination or Change in Control.”

On March 28, 2022, the Company and Ms. Butler entered into an amended employment agreement. Ms. Butler’s employment under the agreement is at will and is terminable by us or Ms. Butler at any time. Under the terms of the agreement, Ms. Butler currently receives an annual base salary of \$290,000 which may be further adjusted from time to time by the board of directors, and an annual target performance bonus of 30% of her annual salary based on our achievement of certain performance objectives. Ms. Butler is also entitled to certain severance benefits as described below under the section entitled “Payments and Benefits upon Termination or Change in Control.”

On March 25, 2022, Steve R. Martin notified the Company that he intended to retire as Senior Vice President and Chief Financial Officer of the Company effective as of June 30, 2022 and the Company and Mr. Martin entered into an advisory letter agreement, which amends his employment agreement and sets forth the terms and conditions of his continuing relationship with the Company. Under the terms of the advisory letter agreement, Mr. Martin received an annual base salary of \$389,340 and remained eligible for all fringe benefit plans available to other employees through December 31, 2022. Mr. Martin was not eligible to receive grants of equity awards or to participate in the annual bonus program for the 2022 fiscal year. Under the terms of the advisory letter agreement, Mr. Martin’s equity awards will continue to vest through December 31, 2022. Subject to completion of the advisory services through December 31, 2022, Mr. Martin then received full vesting in one half of the then unvested Company stock options and all vested equity securities shall be exercisable in full for their full remaining term. The advisory letter agreement replaces and supersedes

the offer letter agreement between Mr. Martin and the Company dated as of January 18, 2016, as amended as of April 1, 2017.

Payments and Benefits upon Termination or Change in Control

Dr. Varnum. Under the terms of his amended offer letter agreement, if Dr. Varnum is terminated without cause or resigns for good reason (in each case as defined in the agreement), then he will be entitled to severance payments equal to six months of continued base salary, and additionally, if such termination or resignation occurred in connection with a change in control, full acceleration of his time-based equity awards, provided that in either case, he executes an effective release of claims.

Dr. Pastagia. Under the terms her amended offer letter agreement, if Dr. Pastagia is terminated without cause or resigns for good reason (in each case as defined in the agreement), then she will be entitled to severance payments equal to six months of continued base salary, and additionally, if such termination or resignation occurred in connection with a change in control, full acceleration of her time-based equity awards, provided that in either case, she executes an effective release of claims.

Ms. Butler. Under the terms her amended offer letter agreement, if Ms. Butler is terminated without cause or resigns for good reason (in each case as defined in the agreement), then she will be entitled to severance payments equal to six months of continued base salary, and additionally, if such termination or resignation occurred in connection with a change in control, full acceleration of her time-based equity awards, provided that in either case, she executes an effective release of claims.

All of the named executive officers held stock options under our equity incentive plans that were granted subject to the general terms of our equity incentive plans and form of stock option agreements. The specific vesting terms of each of the named executive officer's stock options are described below under "Outstanding Equity Awards at Fiscal Year End."

If within 1 month prior to, or within 12 months after, a change in control, the named executive officer is terminated due to an involuntary termination (not including death or disability) without cause or due to a voluntary termination with good reason, then any unvested stock options held by that officer will vest in full.

Outstanding Equity Awards at Fiscal Year End

The following table sets forth certain information regarding all outstanding equity awards held by the named executive officers as of December 31, 2022.

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date
Dr. Varnum	15,193 (1)	—	38.12	4/21/2024
	4,932 (1)	—	38.12	12/8/2024
	224,043 (2)	74,681 (2)	3.15	5/21/2029
	23,000 (3)	—	3.15	12/7/2030
	28,000 (2)	84,000 (2)	5.14	3/25/2031
	31,250 (2)	93,750 (2)	3.82	8/2/2031
	—	240,000 (2)	5.11	4/12/2032
	<u>326,418</u>	<u>492,431</u>		
Ms. Pastagia	6,250 (2)	18,750 (2)	5.14	3/25/2031
	0	80,000 (2)	5.11	4/12/2032
	<u>6,250</u>	<u>98,750</u>		
Ms. Butler	714 (1)	0	14.28	9/15/2027
	11,250 (2)	3,750 (2)	3.15	5/21/2029
	7,500 (2)	22,500 (2)	5.14	3/25/2031
	0	50,000 (2)	5.11	4/12/2032
	<u>19,464</u>	<u>76,250</u>		
Mr. Martin	713 (1)	0	399.00	1/17/2026
	9,928 (1)	0	12.74	9/6/2027
	130,692 (2)	0	3.15	5/21/2029
	23,000 (3)	0	3.15	12/7/2030
	35,000 (2)	0	5.14	3/25/2031
	<u>199,333</u>	<u>0</u>		

- (1) Twenty-five percent of the shares vest one year after grant date, with the balance vesting in equal monthly installments thereafter over the next four years, subject to continued service and the potential vesting acceleration described in the option agreement.
- (2) Twenty-five percent of the shares vest on each anniversary of the grant date, subject to continued service and the potential vesting acceleration described in the option agreement.
- (3) Fifty percent of the shares vest on each anniversary of the grant date, subject to continued service and the potential vesting acceleration described in the option agreement

Equity Incentive Plans

2016 Equity Incentive Plan

The 2016 Plan was approved by our board of directors in April 2016 and subsequently approved by the stockholders in June 2016, and was most recently amended and restated effective as of May 8, 2019. We continue to grant awards under the 2016 Plan. The plan provides for the issuance of incentive awards in the form of non-qualified and incentive stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards and performance-based stock awards. The awards may be granted by our board of directors to employees, including officers, non-employee directors and consultants who provide services to us or to a subsidiary of ours.

Employee Stock Purchase Plan

Additional long-term equity incentives are provided through the employee stock purchase plan (“ESPP”), which became effective in connection with our 2016 Annual Meeting of Stockholders in May 2016 and which we continue to use pursuant to the terms described herein. The ESPP is intended to qualify as an “employee stock purchase plan” within the meaning of Section 423 of the Internal Revenue Code. Our board of directors has delegated its authority to administer the ESPP to our Compensation Committee. Under the ESPP, all of our regular employees (including the named executive officers) may participate and may contribute, normally through payroll deductions, up to 15% of their earnings for the purchase of our common stock. The ESPP is implemented through a series of offerings of purchase rights to eligible employees. Under the ESPP, we may specify offerings with a duration of not more than 27 months and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which our common stock will be purchased for employees participating in the offering. Unless otherwise determined by our Compensation Committee, shares are purchased for accounts of employees participating in the ESPP at a price per share equal to the lower of (a) 85% of the fair market value of our common stock on the first date of an offering or (b) 85% of the fair market value of our common stock on the date of purchase.

Non-Employee Director Compensation

The following table and related footnotes show the compensation paid during the year ended December 31, 2022 to our non-employee directors.

Name	Fees Earned or Paid in Cash (\$)	Option Awards (\$) (1)	All Other Compensation (\$)	Total (\$)
Jules Haimovitz	78,000	121,111	—	199,111
Odysseas Kostas	44,000	121,111	—	165,111
Robin C. Kramer	57,000	121,111	—	178,111
Todd Patrick (2)	38,300	121,111	—	159,411
Joseph Patti	56,000	121,111	—	177,111
Todd Peterson	48,000	121,111	—	169,111
Sarah J. Schlesinger	46,000	121,111	—	167,111

- (1) In accordance with SEC rules, this column represents the aggregate grant date fair value of the option awards granted during 2022 computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718 for stock-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 13 to the consolidated financial statements included in this Annual Report. The aggregate number of option awards outstanding (including exercisable and unexercisable stock options) as of December 31, 2022, for each non-employee director was as follows:

Board of Directors:	Stock Options Outstanding	Stock Options Exercisable
Jules Haimovitz	63,000	15,000
Odysseas Kostas	111,383	64,383
Robin C. Kramer	91,000	44,000
Todd Patrick	486,530	331,099
Joseph Patti	111,383	64,383
Todd Peterson	111,383	64,383
Sarah J. Schlesinger	111,383	64,383

(2) Mr. Todd Patrick retired from the Board of Directors effective November 15, 2022.

In September 2015, the board of directors approved a revised compensation structure for non-employee directors and the board of directors elected to retain the current cash compensation schedule in May 2019. In 2022, the chairman of our board of directors received an annual cash retainer of \$70,000 and each other non-employee director received an annual cash retainer of \$40,000. For the Audit Committee, the committee chair received an additional annual cash retainer of \$17,000 and each member received an additional annual cash retainer of \$8,000. For the Compensation Committee, the committee chair received an additional annual cash retainer of \$12,000 and each member received an additional annual cash retainer of \$6,000. For the Nominating and Corporate Governance Committee, the committee chair received an additional annual cash retainer of \$8,000 and each member received an additional annual cash retainer of \$4,000.

Limitation of Liability and Indemnification

Sections 23B.08.510 and 23B.08.570 of the Washington Business Corporation Act authorize Washington corporations to indemnify directors and officers under certain circumstances against expenses (including legal expenses) and liabilities incurred in legal proceedings in which they are involved by reason of being a director or officer, as applicable. Section 23B.08.560 of the Washington Business Corporation Act authorizes a corporation, if authorized by its articles of incorporation or by a provision in the corporation's bylaws approved by its stockholders, to indemnify or agree to indemnify a director made a party to a proceeding, or obligate itself to advance or reimburse expenses incurred in a proceeding, without regard to the limitations imposed by Sections 23B.08.510 through 23B.08.550; provided that no such indemnity shall indemnify any director from or on account of (a) acts or omissions of the director finally adjudged to be intentional misconduct or a knowing violation of law, (b) conduct of the director finally adjudged to be in violation of Section 23B.08.310 of the Washington Business Corporation Act (which relates to unlawful distributions) or (c) any transaction with respect to which it was finally adjudged that such director personally received a benefit in money, property or services to which the director was not legally entitled.

Article 11 of our articles of incorporation provides that, to the fullest extent that the Washington Business Corporation Act permits the limitation or elimination of the liability of a director, a director shall not be liable to us or our stockholders for monetary damages for conduct as a director. Section 10 of our bylaws requires us to indemnify every present or former director or officer against expenses, liabilities and losses incurred in connection with serving as a director or officer, as applicable, and to advance expenses of such director or officer incurred in defending any proceeding covered by the indemnity; provided, however, that any indemnity is in accordance with Washington law and does not include indemnification of intentional misconduct, knowing violation of law, or other violations of Washington law, including receipt of benefits in which a director or officer is not entitled.

We maintain a policy of directors' and officers' liability insurance that insures the directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances. We have also entered into indemnification agreements with our executive officers and directors that provide for the indemnification of directors and executive officers to the fullest extent permitted by the Washington Business Corporation Act against expenses reasonably incurred by such persons in any threatened, pending or completed action, suit, investigation or proceeding in connection with their service as (i) a director or officer of us or (ii) a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, at our request. In addition, we are obligated to advance expenses pursuant to the indemnification agreements

under certain circumstances, and the agreements also provide for procedural protections, including a determination by a reviewing party as to whether the indemnitee is permitted to be indemnified under applicable law.

The limitation of liability and indemnification provisions in our articles of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

We believe that these provisions in our articles of incorporation and bylaws and our indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

At present, there is no pending litigation or proceeding involving any of our directors or executive officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

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 in the table below is based on 36,144,706 shares of common stock outstanding as of March 1, 2023.

Information with respect to beneficial ownership provided in the table below is based upon information supplied by officers, directors and principal stockholders and Schedules 13D and 13G and Form 4 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 common stock issuable pursuant to the exercise of stock options or warrants that are either immediately exercisable or exercisable on or before April 30, 2023, which is 60 days after March 1, 2023. 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 Armata Pharmaceuticals, Inc., 4503 Glencoe Avenue, Marina del Rey, California 90292.

Beneficial Owner	Beneficial Ownership	
	Number of Shares	Percent of Total
Greater than 5% Stockholders		
Innoviva, Inc.	64,704,574 (1)	85.4 %
Directors and Named Executive Officers		
Jules Haimovitz (Director)	64,751,074 (2)	85.4 %
Odysseas D. Kostas, M.D. (Director)	64,785,457 (3)	85.4 %
Robin C. Kramer (Director)	60,500 (4)	* %
Joseph M. Patti, Ph.D. (Director)	80,883 (5)	* %
Todd C. Peterson, Ph.D. (Director)	80,883 (6)	* %
Sarah J. Schlesinger, M.D. (Director)	64,785,457 (7)	85.4 %
Brian Varnum, Ph. D. (Chief Executive Officer)	445,624 (8)	1.20 %
Mina Pastagia, M.D. (Senior Vice President, Clinical Development)	75,810 (9)	* %
Erin Butler (Vice President, Finance and Administration)	39,464 (10)	* %
All current executive officers and directors as a group (9 persons)	65,696,004 (11)	85.7 %

* Represents beneficial ownership of less than 1%.

- (1) The shares listed were reported on a Schedule 13D/A filed with the SEC on January 10, 2023, with respect to shares of common stock held by Innoviva, Inc. and Innoviva Strategic Opportunities, LLC. Innoviva, Inc. holds 8,710,800 shares of common stock and warrants to acquire an additional 8,710,800 shares of common stock. Innoviva Strategic Opportunities, LLC holds 16,365,969 shares of common stock, warrants to acquire an additional 10,653,847 shares of common stock, and 20,263,158 shares of common stock the entity has the right to acquire from us within 60 days of March 1, 2023, pursuant to a convertible credit agreement. The principal business address of the reporting persons is c/o Innoviva, Inc., 1350 Old Bayshore Highway, Suite 400, Burlingame, CA 94010. Innoviva designated Jules Haimovitz and Odysseas Kostas, M.D., two of the members of the board of directors of Innoviva, to serve on the Board. Additionally, Sarah Schlesinger, M.D., is a member of the board of directors of Innoviva. As such, solely for purposes of Section 16 of the Exchange Act of 1934, as amended, Innoviva, Inc. and Innoviva Strategic Opportunities, LLC may be deemed to be directors by deputation. For purposes of the exemption under Rule 16b-3 promulgated under the Exchange Act, the Board approved the acquisition of any direct or indirect pecuniary interest in any shares of common stock, including any shares of common stock issuable upon the exercise of the aforementioned warrants.
- (2) Consists of a) 46,500 shares of common stock that Mr. Haimovitz has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options, (b) 8,710,800 shares of common stock and warrants exercisable for 8,710,800 shares of common stock held by Innoviva, Inc., and (c) 16,365,969 shares of common stock, warrants exercisable for 10,653,847 shares of common stock, and the right to acquire 20,263,158 shares of common stock pursuant to a convertible credit agreement held by Innoviva Strategic Opportunities, LLC. Innoviva, Inc and Innoviva Strategic Opportunities, LLC are entities with which Mr. Haimovitz is affiliated due to his position as a director of Innoviva, Inc. Mr. Haimovitz may be deemed to have shared voting and dispositive power over the shares beneficially owned by Innoviva, Inc. and Innoviva Strategic Opportunities, LLC, but disclaims such beneficial ownership except to the extent of their pecuniary interest therein, if any.
- (3) Consists of (a) 80,883 shares of common stock that Dr. Kostas has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options, (b) 8,710,800 shares of common stock and warrants exercisable for 8,710,800 shares of common stock held by Innoviva, Inc., and (c) 16,365,969 shares of common stock, warrants exercisable for 10,653,847 shares of common stock, and the right to acquire 20,263,158 shares of common stock pursuant to a convertible credit agreement held by Innoviva Strategic Opportunities, LLC.

Innoviva, Inc and Innoviva Strategic Opportunities, LLC are entities with which Dr. Kostas is affiliated due to his position as a director of Innoviva, Inc. Dr. Kostas may be deemed to have shared voting and dispositive power over the shares beneficially owned by Innoviva, Inc. and Innoviva Strategic Opportunities, LLC, but disclaims such beneficial ownership except to the extent of their pecuniary interest therein, if any.

- (4) Consists of 60,500 shares of common stock that Ms. Kramer has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (5) Consists of 80,883 shares of common stock that Dr. Patti has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (6) Consists of 80,883 shares of common stock that Dr. Peterson has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (7) Consists of (a) 80,883 shares of common stock that Dr. Schlesinger has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options, (b) 8,710,800 shares of common stock and warrants exercisable for 8,710,800 shares of common stock held by Innoviva, Inc., and (c) 16,365,969 shares of common stock, warrants exercisable for 10,653,847 shares of common stock, and the right to acquire 20,263,158 shares of common stock pursuant to a convertible credit agreement held by Innoviva Strategic Opportunities, LLC. Innoviva, Inc and Innoviva Strategic Opportunities, LLC are entities with which Dr. Schlesinger is affiliated due to her position as a director of Innoviva, Inc. Dr. Schlesinger may be deemed to have shared voting and dispositive power over the shares beneficially owned by Innoviva, Inc. and Innoviva Strategic Opportunities, LLC, but disclaims such beneficial ownership except to the extent of their pecuniary interest therein, if any.
- (8) Consists of (a) 615 shares of common stock, (b) 30,591 restricted shares of common stock and (c) 414,418 shares of common stock that Dr. Varnum has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (9) Consists of (a) 43,310 shares of common stock and (b) 32,500 shares of common stock that Dr. Pastagia has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (10) Consists of 39,464 shares of common stock that Ms. Butler has the right to acquire from us within 60 days of March 1, 2023, pursuant to the exercise of stock options.
- (11) Represents beneficial ownership of our common stock held by our current directors and executive officers as a group as of March 1, 2023, including any options and warrants exercisable within 60 days of March 1, 2023.

Equity Compensation Plan Information

In March 2009, our Board of Directors and stockholders adopted our 2009 Stock Incentive Plan, or the 2009 Plan. There are no shares of common stock remaining for future awards under the 2009 Plan.

In October 2012, our Board of Directors approved and adopted our 2012 Stock Incentive Plan, or the 2012 Plan. There are no shares of common stock remaining for future awards under the 2012 Plan.

In December 2013, our Board of Directors adopted the 2013 Stock Incentive Plan, or the 2013 Plan. Our stockholders approved the 2013 Plan in February 2014 and an amendment to the plan in August 2015. The 2013 Plan replaced the 2012 Plan. There are no shares of common stock remaining for future awards under the 2013 Plan.

In April 2016, our Board of Directors adopted our 2016 Equity Incentive Plan, or the 2016 Plan. In connection with the Merger, the name of the 2016 Plan was changed to the Armata Pharmaceuticals, Inc. 2016 Equity Incentive Plan. In connection with the Merger, the Company assumed the C3J Jian, Inc. Amended 2006 Stock Option Plan (the “Assumed 2006 Plan”) and the C3J Therapeutics, Inc. 2016 Stock Plan (the “Assumed 2016 Plan”). These plans provided for stock

option and restricted stock awards (“RSAs”) to C3J employees in years prior to the Merger with AmpliPhi. Pursuant to the Merger Agreement, all of the outstanding C3J stock options and restricted stock awards granted under the Assumed 2006 Plan and the Assumed 2016 Plan were converted into and became stock options and restricted stock awards in the Company.

In June 2019, the Company added 987,354 shares of common stock to the shares authorized for issuance under the 2016 Plan pursuant to an amendment to such plan approved by the Company’s stockholders at a special meeting held on May 8, 2019. In addition, 115,336 shares of common stock were automatically added to the shares authorized for issuance under the 2016 Plan on January 1, 2019 pursuant to an “evergreen” provision contained in the 2016 Plan.

The following table provides information as of December 31, 2022 with respect to our equity compensation plans:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	3,352,803	\$ 5.32	570,570
Equity compensation plans not approved by security holders	—	—	—
Total	3,352,803	\$ 5.32	570,570

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Related-Person Transactions Policy and Procedures

We have adopted a written related-person transactions policy that sets forth our policies and procedures regarding the identification, review, consideration and oversight of “related-person transactions.” For purposes of our policy only, a “related-person transaction” is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any “related person” are participants involving an amount that exceeds \$120,000 (or such lower threshold as may be applicable to us from time to time pursuant to the rules and regulations of the SEC or the NYSE American exchange).

Transactions involving compensation for services provided to us by an employee, consultant or director are not considered related-person transactions under this policy. A related person is any person who is, or at any time since the beginning of our last fiscal year, was, an executive officer, director or director nominee, any holder of more than 5% of our common stock, any of the foregoing’s immediate family members and any entity owned or controlled by any such persons.

Under the policy, where a transaction has been identified as a related-person transaction, management must present information regarding the proposed related-person transaction to our Audit Committee (or, where review by our Audit Committee would be inappropriate, to another independent body of our Board of Directors) for approval. The presentation must include a description of, among other things, the material facts, the direct and indirect interests of the related persons, the benefits of the transaction to us and whether any alternative sources for comparable services or products are available. To identify related-person transactions in advance, we rely on information supplied by our executive officers, directors, director nominees and certain significant stockholders. In considering related-person transactions, our Audit Committee or other independent body of our Board of Directors takes into account the relevant available facts and circumstances including, but not limited to:

- the risks, costs and benefits to us;
- the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the terms of the transaction; and
- the terms available to or from, as the case may be, unrelated third parties.

In the event a director has an interest in the proposed transaction, the director must recuse himself or herself from the deliberation and approval.

Certain Related-Person Transactions

Described below are any transactions occurring since January 1, 2016, and any currently proposed transactions, to which C3J or Armata was a party and in which:

- The amounts involved exceeded or will exceed the lesser of (i) \$120,000 and (ii) 1% of the average of the respective company's total assets at year-end for the last two completed fiscal years; and
- A director, director nominee, executive officer, holder of more than 5% of the outstanding capital stock of the respective company, or any member of such person's immediate family had or will have a direct or indirect material interest.

Financing Transaction

February 2020 Private Placement

On January 27, 2020, we entered into the Securities Purchase Agreement with Innoviva, pursuant to which the Company agreed to issue and sell to Innoviva, in a private placement, up to 8,710,800 newly issued shares of our common stock (the "Private Placement Shares") and warrants to purchase up to 8,710,800 shares of common stock, with an exercise price per share of \$2.87 (the "Private Placement"). Each share of common stock was sold together with one warrant, and the per-unit purchase price is \$2.87.

First Closing: The Private Placement occurred in two tranches. The first closing (the "First Closing") occurred on February 12, 2020, at which time Innoviva purchased 993,139 Private Placement Shares and 993,139 Common Warrants, which was the maximum number of Private Placement Shares and Common Warrants issuable to Innoviva in compliance with any and all applicable laws and without the requirement for the prior receipt of the stockholders' approval under the listing requirements of the NYSE American, in exchange for an aggregate gross cash payment of approximately \$2.8 million. The First Closing was subject to the satisfaction of certain previously disclosed closing conditions (including obtaining voting agreements (the "*Voting Agreements*") from stockholders of the Company representing at least 50.1% of the outstanding shares of common stock).

Second Closing: At the closing of the second tranche (the "Second Closing"), Innoviva purchased 7,717,661 Private Placement Shares and 7,717,661 Common Warrants for an aggregate purchase price of approximately \$22.2 million.

Registration Rights Agreement and Investor Rights Agreement: As part of the First Closing of the Private Placement, the Company entered into a registration rights agreement and an investor rights agreement (the "Investor Rights Agreement") with Innoviva. Pursuant to such registration rights agreement, on April 1, 2020, the Company filed a registration statement on Form S-3 covering the resale of the securities issued and sold pursuant to the Securities Purchase Agreement with the SEC, which was declared effective on April 8, 2020. The Investor Rights Agreement provides that for so long as Innoviva and its affiliates hold at least 12.5% of the outstanding shares of our common stock on a fully-diluted basis, Innoviva has the right to designate two (2) directors to our board of directors and for so long as Innoviva and its affiliates hold at least 8% but less than 12.5% of the outstanding shares

of Common Stock on a fully-diluted basis, Innoviva has the right to designate one (1) director to our board of directors, subject to certain qualifications and conditions in the Investor Rights Agreement. The Investor Rights Agreement also provides for participation rights for Innoviva to participate in our future offerings of equity securities.

January 2021 Private Placement

On January 26, 2021, we entered into the Securities Purchase Agreement with Innoviva SO, a wholly-owned subsidiary of Innoviva, Inc. (collectively, “Innoviva”), pursuant to which we agreed to issue and sell to Innoviva, in the 2021 Private Placement, 6,153,847 newly issued shares of our common stock and warrants to purchase 6,153,847 shares of common stock, with an exercise price per share of \$3.25. Each share of common stock was sold together with one warrant granting the warrant holder the right to purchase an additional share of common stock at \$3.25 per share. The January 2021 Private Placement occurred in two tranches.

First Closing: The First Closing occurred on January 26, 2021. Innoviva purchased 1,867,912 shares and warrants to purchase 1,867,912 shares of common stock for an aggregate purchase price of approximately \$6.1 million.

Second Closing: The Second Closing occurred on March 17, 2021. Innoviva purchased 4,285,935 shares and warrants to purchase 4,285,935 shares of common stock for an aggregate purchase price of approximately \$13.9 million.

Registration Rights Agreement and Investor Rights Agreement:

As part of the First Closing of the 2021 Private Placement, we entered into a registration rights agreement and an amended and restated investor rights agreement (the “A&R IRA”) with Innoviva.

Pursuant to such Registration Rights Agreement, on May 13, 2021, the Company filed a registration statement on Form S-3 covering the resale of the securities issued and sold pursuant to such Securities and Purchase Agreement with the SEC, which was declared effective on May 20, 2021.

The A&R IRA provides that for so long as Innoviva and its affiliates hold at least 12.5% of the outstanding shares of common stock of Armata on a fully-diluted basis, Innoviva shall have the right to designate two directors to our Board of Directors and for so long as Innoviva and its affiliates hold at least 8%, but less than 12.5%, of the outstanding shares of common stock of the Company on a fully-diluted basis, Innoviva shall have the right to designate one director, subject to certain conditions and qualifications set forth in the A&R IRA. The A&R IRA also provides Innoviva with certain subscription rights in the event of any new issuances.

October 2021 Private Placement

On October 28, 2021, the Company entered into a securities purchase agreement (the “October 2021 Securities Purchase Agreement”) with the Cystic Fibrosis Foundation (“CFF”), a Delaware corporation, the Company’s partner for its lead Phase 1b/2a clinical development program, and Innoviva SO, a wholly-owned subsidiary of Innoviva, Inc., for the private placement of newly issued shares of common stock of the Company. Pursuant to the October 2021 Securities Purchase Agreement, the Company issued and sold 909,091 shares to CFF and 1,212,122 shares of its common stock to Innoviva, each at a per share price of \$3.30 (the “October 2021 Private Placements”).

Registration Rights Agreement and Investor Rights Agreement:

As part of the October 2021 Private Placement, the Company also entered into a registration rights agreement (the “October 2021 Registration Rights Agreement”) with the Purchasers. Pursuant to the October 2021 Registration Rights Agreement, on March 29, 2022, the Company filed a registration statement on Form S-3 covering the resale of the securities issued and sold pursuant to the Securities Purchase Agreement with the SEC, which was declared effective on April 6, 2022.

The Company also entered into an Amended and Restated Voting Agreement with Innoviva (the “October 2021 Voting Agreement”), pursuant to which Innoviva agreed not to vote or take any action by written consent with respect to shares of common stock of the Company held by Innoviva, or any of its subsidiaries which represent, in the aggregate, more than 49.5% of the total number of shares of common stock issued and outstanding of the Company as of any given record date for voting (such shares, for purposes of this paragraph, the “Excess Shares”) on matters related to the election of directors to the Board of Directors or removal of directors from the Board of Directors (for the purposes of this paragraph, “Board Matters”) presented at any meeting of the stockholders of the Company (or any adjournment or postponement thereof) or for their action by written consent, in each case, unless the Board of Directors authorizes Innoviva to vote such Excess Shares with respect to Board Matters.

February 2022 Private Placement

On February 9, 2022, the Company entered into a securities purchase agreement to sell its common stock and warrants to Innoviva (“February 2022 Private Placement”). The gross proceeds to the Company from the transaction were \$45 million, before deducting estimated offering expenses.

Pursuant and subject to the terms and conditions of the securities purchase agreement and related agreements, Innoviva agreed to purchase 9,000,000 newly issued shares of our common stock, at a price of \$5.00 per share, and warrants to purchase up to 4,500,000 additional shares of our common stock, with an exercise price of \$5.00 per share. The stock purchases were completed in two tranches. On February 9, 2022, Innoviva purchased 3,614,792 shares of common stock and warrants to purchase 1,807,396 shares of common stock for an aggregate purchase price of approximately \$18.1 million. On March 31, 2022, upon our stockholders voting in favor of the transaction, Innoviva purchased approximately 5,385,208 shares of common stock and warrants to purchase approximately 2,692,604 shares of common stock for an aggregate purchase price of \$26.9 million.

Registration Rights Agreement and Investor Rights Agreement:

As part of the first closing of the February 2022 Private Placement, the Company entered into an amended and restated investor rights agreement (the “Second A&R IRA”), which amended and restated in its entirety that certain Investor Rights Agreement, dated February 12, 2020, as amended and restated as of January 26, 2021, by and among Innoviva, Innoviva, Inc. and the Company. Pursuant to the Second A&R IRA, for so long as Innoviva and its affiliates hold at least 12.5% of the outstanding shares of common stock of the Company on a fully-diluted basis, Innoviva and its affiliates shall have the right to designate two directors to the Board of Directors of the Company and for so long as Innoviva and its affiliates hold at least 8%, but less than 12.5%, of the outstanding shares of common stock of the Company on a fully-diluted basis, Innoviva and its affiliates shall have the right to designate one director to the Board of Directors, subject to certain conditions and qualifications set forth in the Second A&R IRA. The Second A&R IRA also provides Innoviva and its affiliates with certain subscription rights in the event of any new issuances.

The Company also entered into a registration rights agreement with Innoviva. Pursuant to the Registration Rights Agreement, on May 16, 2022, the Company filed a registration statement on Form S-3 covering the resale of the securities issued and sold pursuant such Securities Purchase Agreement with the SEC, which was effective on May 31, 2022.

The Company also entered into an amended and restated voting agreement with Innoviva and Innoviva, Inc. (the “February 2022 Voting Agreement”), which amended and restated in its entirety that certain Voting Agreement dated January 26, 2021, as amended and restated as of October 28, 2021, pursuant to which Innoviva and its affiliates agreed not to vote or take any action by written consent with respect to shares of common stock of the Company held by Innoviva or any of its subsidiaries which represent, in the aggregate, more than 49.5% of the total number of shares of common stock voting with respect to certain matters (such shares, for purposes of this paragraph, the “Excess Shares”) related to the election of directors to the Board of Directors, removal of directors from the Board of Directors or amendment of the bylaws of the Company to reduce the maximum number of directors or set the number of directors who may serve on the Board of Directors (for the purposes of this paragraph,

“Board Matters”) presented at any meeting of the stockholders of the Company (or any adjournment or postponement thereof) or for their action by written consent, in each case, unless the Board of Directors authorizes Innoviva or its affiliates to vote such Excess Shares with respect to Board Matters.

Director and Executive Officer Compensation

The compensation of our directors and named executive officers, including employment agreements and other compensatory arrangements with executive officers and stock option grants to executive officers and directors, is more fully described in the section above entitled “Executive Compensation.”

Indemnification Agreements

We have entered, and intend to continue to enter, into separate indemnification agreements with each of our directors and executive officers, as described in the section above entitled “Executive Compensation — Limitation of Liability and Indemnification.” In addition, the Merger Agreement provided that, for a period of six years following the effective time of the Merger, we will indemnify and hold harmless each person who is, has been, or who became prior to the effective time of the Merger, a director, officer, fiduciary or agent of us and our subsidiaries or C3J, respectively, against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys’ fees and disbursements, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that such person is or was a director, officer, fiduciary or agent of C3J or us or any of its or our respective subsidiaries, whether asserted or claimed prior to, at or after the effective time, in each case, to the fullest extent permitted under applicable law. Each such person will be entitled to advancement of expenses incurred in the defense of any such claim, action, suit, proceeding or investigation from us.

The Merger Agreement also provided that the provisions relating to the indemnification, advancement of expenses and exculpation of our present and former directors and officers set forth in our articles of incorporation and bylaws will not be amended, repealed or otherwise modified for a period of six years from the effective time of the Merger in any manner that would adversely affect the rights of individuals who, at the effective time of the Merger, were our officers or directors. The Merger Agreement required that, after the closing of the Merger, our articles of incorporation and bylaws were to contain provisions at least as favorable as the provisions relating to the indemnification, advancement of expenses and exculpation of present and former directors and officers set forth in our articles of incorporation and bylaws prior to the Merger.

Prior to the effective time of the Merger, we secured and prepaid, at C3J’s expense, a six year “tail policy” on our then-existing directors’ and officers’ liability insurance policy.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table represents aggregate fees incurred for Ernst & Young LLP services for the years ended December 31, 2022 and 2021:

	Fiscal Year Ended December 31, 2022	Fiscal Year Ended December 31, 2021
Armata Pharmaceuticals, Inc.		
Audit Fees	\$ 415,000	\$ 370,000
Audit Related Fees	26,000	10,000
Tax Fees	—	—
All Other Fees	10,000	—
Total	<u>\$ 451,000</u>	<u>\$ 380,000</u>

Representatives of Ernst & Young LLP attended all of the meetings of the Audit Committee occurring during the years ended December 31, 2022 and 2021.

The Audit Committee approves in advance the engagement and fees of the independent registered public accounting firm for all audit services and non-audit services, based upon independence, qualifications and, if applicable, performance. The Audit Committee may form and delegate to subcommittees of one or more members of the Audit Committee the authority to grant pre-approvals for audit and permitted non-audit services, up to specific amounts. All audit services provided by Ernst & Young LLP for the periods presented were pre-approved by the Audit Committee.

PART IV

Item 15. EXHIBITS

- (1) The following is an index of the financial statements required by this item that are included in this Form 10-K:

	Page
Report of Independent Registered Public Accounting Firm	86
Consolidated Balance Sheets	88
Consolidated Statements of Operations	89
Consolidated Statements of Stockholders' Equity	90
Consolidated Statements of Cash Flows	91
Notes to Consolidated Financial Statements	92

- (2) Financial Statement Schedules. Financial statement schedules are not included herein as the required information is not applicable or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the Consolidated Financial Statements and accompanying notes included in this Form 10-K.
- (3) Exhibits. The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this Annual Report.

Exhibit Index

Exhibit Number	Description of Document
3.1	Amended and Restated Articles of Incorporation of the Company, as amended (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q, filed with the SEC on November 16, 2015).
3.2	Articles of Amendment to Articles of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the registrant's Current Report on Form 8-K (File No. 001-37544), filed with the SEC on April 24, 2017).
3.3	Articles of Amendment to Articles of Incorporation of the Company (incorporated by reference to Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q, filed on November 8, 2018).
3.4	Articles of Amendment to Amended and Restated Articles of Incorporation of the registrant (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on May 10, 2019).
3.5	Amended and Restated Bylaws of the registrant (incorporated by reference to Exhibit 3.5 to the Quarterly Report on Form 10-Q (File No. 001-37544), filed with the SEC on August 14, 2019).

- 3.6 Articles of Merger, dated as of May 9, 2019 (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on May 10, 2019).
- 3.7 Articles of Amendment to Articles of Incorporation of the registrant, dated as of December 10, 2019 (incorporated herein by reference to Exhibit 3.1 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on December 11, 2019).
- 3.8 Amendment to Amended and Restated Bylaws of the registrant (December 10, 2019) (incorporated herein by reference to Exhibit 3.2 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on December 11, 2019).
- 3.9 Amendment to Amended and Restated Bylaws of the registrant (February 24, 2020) (incorporated herein by reference to Exhibit 3.1 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on February 26, 2020).
- 3.10 Articles of Amendment to Articles of Incorporation of the Company (effective March 26, 2020) (incorporated herein by reference to Exhibit 3.1 to the Current Report on Form 8-K (File No. 001-37544), filed with the SEC on March 30, 2020).
- 4.1 Reference is made to Exhibits 3.1 through 3.8.
- 4.2 Form of Common Stock Certificate (incorporated by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8 (File No. 333-217563), filed on May 1, 2017).
- 4.3 Form of Common Stock Warrant issued to purchasers in March 2015 private placement (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on March 19, 2015).
- 4.4 Form of Warrant to Purchase Shares of Common Stock issued in connection with the Company's acquisition of certain assets of Novolytics Limited in February 2016 (incorporated by reference to Exhibit 4.13 to the Company's Annual Report on Form 10-K, filed with the SEC on March 30, 2016).
- 4.5 Form of Warrant to Purchase Common Stock issued to purchasers in May 2017 (incorporated by reference to Exhibit 4.18 to the Company's Registration Statement on Form S-1 (File No. 333-217169)).
- 4.6 Form of Common Stock Warrant (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on January 29, 2020).
- 4.7 Registration Rights Agreement, dated January 26, 2021, by and between the Company and Innoviva (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K, filed with the SEC on January 27, 2021)
- 4.8 Form of Common Stock Warrant (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on January 27, 2021)
- 4.9 Description of the Company's securities registered under Section 12 of the Exchange Act.
- 4.10 Form of Common Stock Warrant (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on February 11, 2022)
- 9.1 Form of Voting Agreement, by and between the Company and Innoviva (incorporated herein by reference to Exhibit 10.4 to the Current Report on Form 8-K, filed on January 27, 2021).

- 10.1+ Targeted Genetics Corporation 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.12 to the Company's Registration Statement on Form 10 (File No. 000-23930), filed December 16, 2013, as amended).
- 10.2+ AmpliPhi Biosciences Corporation 2012 Stock Incentive Plan (incorporated by reference to Exhibit 10.13 to the Company's Registration Statement on Form 10 (File No. 000-23930), filed December 16, 2013, as amended).
- 10.3+ Form of Stock Option Agreement under AmpliPhi Biosciences Corporation 2012 Stock Incentive Plan (incorporated by reference to Exhibit 10.14 to the Company's Registration Statement on Form 10 (File No. 000-23930), filed December 16, 2013, as amended).
- 10.4+ AmpliPhi Biosciences Corporation 2013 Stock Incentive Plan (incorporated by reference to Exhibit 10.21 to the Company's Registration Statement on Form 10 (File No. 000-23930), filed December 16, 2013, as amended).
- 10.5+ Form of Grant Notice and Stock Option Agreement under AmpliPhi Biosciences Corporation 2013 Stock Incentive Plan (incorporated by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K, filed with the SEC on March 30, 2016).
- 10.6+ Armata Pharmaceuticals, Inc. 2016 Equity Incentive Plan, as amended (incorporated by reference to Exhibit 99.1 to the registrant's Registration Statement on Form S-8, filed with the SEC on June 10, 2019).
- 10.7+ Form of Stock Option Grant Notice, Option Agreement and Notice of Exercise under the Armata Pharmaceuticals, Inc. 2016 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.9 to the Quarterly Report on Form 10-Q, filed with the SEC on August 14, 2019).
- 10.8+ Armata Pharmaceuticals, Inc. 2016 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit 10.10 to the Quarterly Report on Form 10-Q, filed with the SEC on August 14, 2019).
- 10.9+ Form of Indemnity Agreement with the Company's Directors and Executive Officers (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K, filed with the SEC on January 19, 2016).
- 10.10+ Form of Director Appointment Letter (incorporated by reference to Exhibit 10.4 to the registrant's Current Report on Form 8-K, filed with the SEC on May 10, 2019).
- 10.11* Research Collaboration and Option to License Agreement, effective as of May 24, 2017, by and between Synthetic Genomics, Inc. and Merck Sharp & Dohme Corp. (incorporated herein by reference to Exhibit 10.12 to the Quarterly Report on Form 10-Q, filed with the SEC on August 14, 2019).
- 10.12* Asset Purchase Agreement, dated as of February 14, 2018, by and between C3J Therapeutics, Inc., Synthetic Genomics, Inc. and Synthetic Genomics Vaccines, Inc., as amended by Amendment to Asset Purchase Agreement, made and entered into as of December 20, 2018 (incorporated herein by reference to Exhibit 10.12 to the Quarterly Report on Form 10-Q, filed with the SEC on August 14, 2019).
- 10.13 Securities Purchase Agreement, dated January 26, 2021, by and between the Company and Innoviva (incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K, filed with the SEC on January 27, 2021).
- 10.14 Amended and Restated Investor Rights Agreement, dated January 26, 2021, by and between the Company and Innoviva Strategic Opportunities LLC (incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K, filed with the SEC on January 27, 2021).

- 10.15* Letter Agreement, dated as of March 10, 2020, by and between Armata Pharmaceuticals, Inc. and the Cystic Fibrosis Foundation (incorporated herein by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q, filed with the SEC on May 14, 2020).
- 10.16+ Employment Agreement, dated as of January 18, 2012, by and between C3 Jian, Inc. and Brian Varnum (incorporated herein by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q, filed with the SEC on May 14, 2020).
- 10.17+ Employment Agreement, dated August 1, 2021, between Armata Pharmaceuticals, Inc. and Brian Varnum, Ph.D. (incorporated herein by reference to Exhibit 10.22 to the Quarterly Report on Form 10-Q, filed with the SEC on May 13, 2021).
- 10.18 Securities Purchase Agreement, dated October 29, 2021, by and among the Company, Innoviva, and CFF (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on October 29, 2021).
- 10.19 Registration Rights Agreement, dated October 29, 2021, by and among the Company, Innoviva, and CFF (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on October 29, 2021).
- 10.20 Amended and Restated Voting Agreement, dated October 29, 2021, by and among the Company, Innoviva, and Innoviva, Inc. (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K, filed with the SEC on October 29, 2021).
- 10.21 Lease Agreement, dated October 28, 2021, by and between the Company and 5005 McConnell Avenue, LLC (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on November 2, 2021).
- 10.22 Assignment and First Amendment of Office Lease, dated as of April 2020, by and among Armata Pharmaceuticals, Inc., C3 Jian, Inc. and Marina Business Center, LLC (incorporated herein by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q, filed with the SEC on May 14, 2020).
- 10.23 Securities Purchase Agreement, dated February 9, 2022, by and among the Company and Innoviva (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on February 11, 2022).
- 10.24 Amended and Restated Investor Rights Agreement, dated February 9, 2022, by and among the Company and Innoviva (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on February 11, 2022).
- 10.25 Registration Rights Agreement, dated February 9, 2022, by and among the Company and Innoviva (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K, filed with the SEC on February 11, 2022).
- 10.26 Second Amended and Restated Voting Agreement, dated February 9, 2022, by and among the Company and Innoviva (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K, filed with the SEC on February 11, 2022).
- 10.27 Advisory Agreement, dated March 28, 2022, between the Company and Mr. Martin (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on March 25, 2022).

10.28	Employment Agreement, dated March 28, 2022, between the Company and Ms. Butler. (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on March 25, 2022)
10.29	Letter Agreement, dated December 14, 2022, by and between the Company and Todd R. Patrick (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on December 19, 2022).
10.30	Secured Convertible Credit and Security Agreement, dated January 10, 2023 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on January 10, 2023).
16.1	Letter from PricewaterhouseCoopers LLP to the U.S. Securities and Exchange Commission, dated May 10, 2019 (incorporated herein by reference to Exhibit 16.1 to the Current Report on Form 8-K, filed with the SEC on May 10, 2019).
21.1	Subsidiaries of the Company.
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney (contained on the signature page).
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a).
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a).
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350.
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

+ Indicates management contract or compensatory plan or arrangement.

*** Indicates that certain identified information in the exhibit has been omitted because it is both (i) not material, and (ii) would likely cause competitive harm if publicly disclosed.**

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized.

ARMATA PHARMACEUTICALS, INC.

Date: March 16, 2023

By: /s/ Brian Varnum

Name: Brian Varnum, Ph.D.

Title: Chief Executive Officer

(Principal Executive Officer)

SIGNATURES AND POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Brian Varnum, and Erin Butler, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K and to file the same, with all exhibits thereto and all documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or any of them, or his or her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Brian Varnum</u> Brian Varnum, Ph.D.	Chief Executive Officer and Director (Principal Executive Officer)	March 16, 2023
<u>/s/ Erin Butler</u> Erin Butler	Vice President, Finance and Administration (Principal Financial and Accounting Officer)	March 16, 2023
<u>/s/ Jules Haimovitz</u> Jules Haimovitz	Chairman of the Board of Directors	March 16, 2023
<u>/s/ Odysseas D. Kostas, M.D</u> Odysseas D. Kostas, M.D.	Director	March 16, 2023
<u>/s/ Robin Kramer</u> Robin Kramer	Director	March 16, 2023
<u>/s/ Joseph M. Patti, Ph.D.</u> Joseph M. Patti, Ph.D.	Director	March 16, 2023
<u>/s/ Todd C. Peterson, Ph.D.</u> Todd C. Peterson, Ph.D.	Director	March 16, 2023
<u>/s/ Sarah J. Schlesinger, M.D.</u> Sarah J. Schlesinger, M.D.	Director	March 16, 2023

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