UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 2 FORM S-3 REGISTRATION STATEMENT

UNDER THE SECURITIES ACT OF 1933

PMV Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

1 Research Way

Delaware (State or other jurisdiction of incorporation or organization

(I.R.S. Employer Identification Number

Princeton, New Jersey 08536 (609) 642-6670 (Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

> David H. Mack, Ph.D. President and Chief Executive Officer 1 Research Way Princeton, New Jersey 08536 (609) 642-6670

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Kenneth A. Clark Tony Jeffries Megan J. Baier Wilson Sonsini Goodrich & Rosati, Professional Corporation 650 Page Mill Road Palo Alto, California 94304 (650) 493-9300

Winston Kung Chief Operating Officer and Chief Financial Officer PMV Pharmaceuticals, Inc. 1 Research Way Princeton, New Jersey 08536 (609) 642-6670

Approximate date of commencement of proposed sale to the public:

From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: \Box

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. $\ \boxtimes$

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Securities and Exchange Commission, or the Commission, pursuant to Rule 462(e) under the Securities Act, check the following box. □

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. $\ \Box$

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "scalerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Securities Exchange Act of 1934, as amended.

Large accelerated filer Accelerated filer П X Non-accelerated filer Smaller reporting company

Emerging growth company

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

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

EXPLANATORY NOTE

Post-Effective Amendment No. 1 to the Registration Statement on Form S-3ASR (File No. 333-260012), or Post-Effective Amendment No. 1, of PMV Pharmaceuticals, Inc., or the Company, was filed because the Company expected that it would no longer be a "well-known seasoned issuer" (as such term is defined in Rule 405 of the Securities Act of 1933, as amended) when it filed its Annual Report on Form 10-K for the fiscal year ended December 31, 2022. Accordingly, the Company filed Post-Effective Amendment No. 1 for the purpose of including disclosure required for a registrant other than a well-known seasoned issuer, identifying the securities being registered, registering a specific amount of securities and paying the associated filing fee. This Post-Effective Amendment No. 2 to the Registration on Form S-3, or Post-Effective Amendment No. 2, is being filed using EDGAR submission type POS AM in order to convert the Registration Statement to the proper EDGAR submission type for a non-automatic shelf registration statement.

This Post-Effective Amendment No. 2 contains:

- a base prospectus, which covers the offering, sale and issuance by us of up to \$200 million of our common stock, preferred stock, debt securities, warrants, subscription rights, purchase contracts and units; and
- a sales agreement prospectus supplement covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$150.0 million of our common stock that may be issued and sold from time to time under an Open Market Sale AgreementSM with Jefferies LLC, or Jefferies.

The base prospectus immediately follows this explanatory note. The sales agreement prospectus supplement immediately follows the base prospectus. Upon termination of the Open Market Sale AgreementSM with Jefferies, any amounts included in the sales agreement prospectus supplement that remain unsold will be available for sale in other offerings pursuant to the base prospectus, and if no shares are sold under the Open Market Sale AgreementSM with Jefferies, the full amount of this registration statement may be sold in other offerings pursuant to the base prospectus and a corresponding prospectus supplement.

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

Subject to Completion, dated March 1, 2023

PROSPECTUS



PMV Pharmaceuticals, Inc.

\$200,000,000

Common Stock
Preferred Stock
Debt Securities
Warrants
Subscription Rights
Purchase Contracts
Units

The securities covered by this prospectus may be sold by PMV Pharmaceuticals, Inc. from time to time. This prospectus provides you with a general description of the securities.

We may issue securities from time to time in one or more offerings, in amounts, at prices and on terms determined at the time of offering, of up to \$200,000,000 in the aggregate. This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide the specific terms of these securities in supplements to this prospectus, which will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this prospectus. You should read this prospectus and any applicable prospectus supplement before you invest.

The securities may be sold directly to you, through agents or through underwriters and dealers. If agents, underwriters or dealers are used to sell the securities, we will name them and describe their compensation in a prospectus supplement. The price to the public of those securities and the net proceeds we expect to receive from that sale will also be set forth in a prospectus supplement.

Our common stock is listed on The Nasdaq Global Select Market, or Nasdaq, under the symbol "PMVP." On February 24, 2023, the last reported sale price of our common stock was \$7.16 per share. Each prospectus supplement will indicate whether the securities offered thereby will be listed on any securities exchange.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. PLEASE CAREFULLY READ THE INFORMATION UNDER THE HEADINGS "RISK FACTORS" BEGINNING ON PAGE 4 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND "ITEM 1A – RISK FACTORS" OF OUR MOST RECENT REPORT ON FORM 10-K OR 10-Q THAT IS INCORPORATED BY REFERENCE IN THIS PROSPECTUS BEFORE YOU INVEST IN OUR SECURITIES.

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

The date of this prospectus is , 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, under the Securities Act of 1933, as amended, or the Securities Act, using a "shelf" registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings as described in this prospectus for an aggregate offering amount of up to \$200,000,000. Each time that we offer and sell securities pursuant to this prospectus, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering and, to the extent appropriate, any updates to the information about us contained in this prospectus. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement and any related free writing prospectus. Before purchasing any securities, you should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, together with the additional information described under the heading "Where You Can Find More Information" and "Incorporation by Reference."

We have not authorized anyone to provide you with information or to make any representations other than those contained or incorporated by reference in this prospectus, the applicable prospectus supplement or in any related free writing prospectus prepared by or on behalf of us to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus, the applicable prospectus supplement to this prospectus and any related free writing prospectus is accurate as of the date on its respective cover or as otherwise specified therein and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed materially since those dates. This prospectus and the applicable prospectus supplement or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the applicable prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful.

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere, or incorporated by reference, in this prospectus. It does not contain all of the information that may be important to you and your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including the matters set forth under the section of this prospectus captioned "Risk Factors" and the financial statements and related notes and other information that we incorporate by reference herein, including our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q. Unless the context indicates otherwise, references in this prospectus to "PMV Pharmaceuticals, Inc.," "we," "our" and "us" refer, collectively, to PMV Pharmaceuticals, Inc., a Delaware corporation.

Company Overview

We are a precision oncology company pioneering the discovery and development of small molecule, tumor-agnostic therapies targeting p53. p53 is a well-defined tumor suppressor protein known as the "guardian of the genome," and normal, or wild-type, p53 has the ability to eliminate cancer cells. However, mutant p53 proteins can be misfolded and lose their wild-type tumor suppressing function. These p53 mutations are found in approximately half of all cancers. The field of p53 biology was established by our co-founder Dr. Arnold Levine when he discovered the p53 protein in 1979. We have leveraged more than four decades of research experience and developed unique insights into p53 to create a precision oncology platform designed to generate selective, small molecule, tumor-agnostic therapies that structurally correct specific mutant p53 proteins to restore their wild-type function. We are deploying our precision oncology platform to target the top ten most frequent, or hotspot, p53 mutations that are collectively associated with approximately 10-15% of all cancers. In addition, we continue to utilize our platform to target other p53-related cancers.

Our lead product candidate, PC14586, is an orally available small molecule designed to potently and selectively correct p53 misfolding caused by a specific p53 mutation, Y220C, while sparing wild-type p53. The Y220C mutation is associated with 1.0-1.5% of all cancers, including breast, non-small cell lung cancer, or NSCLC, colorectal, pancreatic and ovarian cancers. PC14586 is designed to restore the wild-type conformation by occupying the crevice created by the tyrosine to cysteine mutation in amino acid position 220. While we are in the early stages of discovery and development of our product candidates and our novel approach is unproven, we are initially pursuing a tumor-agnostic development strategy and initiated a Phase 1/2 clinical trial in October 2020. Our strategy is to seek approval under an accelerated pathway, and we believe our Phase 1/2 clinical trial has the potential to serve as a pivotal study. In October 2020, we were granted U.S. Food and Drug Administration, or FDA, Fast Track designation of PC14586 for the treatment of patients with locally advanced or metastatic solid tumors that have a p53 Y220C mutation. We presented our preliminary Phase 1 clinical data in June 2022 and we continue to enroll patients in this trial. In December 2022, we opened a separate arm within the existing Phase 1/2 clinical trial combining PC14586 with KEYTRUDA® (pembrolizumab) in collaboration with Merck and Co. In addition, we are leveraging our precision oncology platform to develop a pipeline of oral small molecule product candidates that structurally correct other p53 hotspot mutations to restore their wild-type function and product candidates that target other p53-related cancers.

A better understanding of mutations that drive cancers have facilitated the development of precise, gene- and protein-specific drugs known as targeted therapies. Targeted therapies have the potential to transform treatment of some cancers by providing robust clinical benefit to patients. In many cases, clinical responses can be dramatic enough to support expedited regulatory approval of these therapies. Further, recent advancements in next-generation-sequencing, or genomic NGS, have accelerated the development of targeted therapies. A recent study found that 75% of oncologists in the United States employ genetic sequencing. We believe p53 mutations are particularly well-suited for the evolving precision oncology paradigm, as a single mutation can cause p53 malfunction, and p53 is one of the genes commonly sequenced, to our knowledge, in NGS panels. We believe that our precision oncology platform offers a substantial opportunity to expand the number of patients who will benefit from targeted therapies.

Our innovation engine consists of three complementary drivers:

- deep understanding of, and leadership in, p53 biology that enable unique insights into drugging individual mutations as well as targeting other p53-related cancers;
- · ability to design on a structural basis selective, oral small molecule product candidates; and
- assays, screens, preclinical model systems and biomarkers that enable us to assess and optimize orally available selective small
 molecule drug product candidates for specific p53 mutants, and for inhibitors of wild-type p53 function.

Corporate Information

We were incorporated in Delaware in March 2013 under the name "PJ Pharmaceuticals, Inc." In July 2013, we changed our name to "PMV Pharmaceuticals, Inc." Our principal executive offices are located at 1 Research Way, Princeton, New Jersey 08536. Our telephone number is (609) 642-6670. Our website address is www.pmvpharma.com. Information contained on, or that can be accessible through, our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

The Securities That May Be Offered

We may offer or sell common stock, preferred stock, debt securities, warrants, subscription rights, purchase contracts and units in one or more offerings and in any combination for an aggregate offering amount of up to \$200,000,000. Each time securities are offered with this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and terms of the securities being offered and the net proceeds we expect to receive from that sale.

The securities may be sold to or through underwriters, dealers or agents or directly to purchasers or as otherwise set forth in the section of this prospectus captioned "*Plan of Distribution*." Each prospectus supplement will set forth the names of any underwriters, dealers, agents or other entities involved in the sale of securities described in that prospectus supplement and any applicable fee, commission or discount arrangements with them.

Common Stock

We may offer shares of our common stock, par value \$0.00001 per share, either alone or underlying other registered securities convertible into our common stock. Holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of funds legally available for the payment of dividends, subject to rights, if any, of preferred stockholders. We have not paid dividends in the past and have no current plans to pay dividends. Each holder of common stock is entitled to one vote per share. The holders of common stock have no preemptive rights.

Preferred Stock

Our board of directors has the authority, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series, and to fix the designation, powers, preferences and rights of the shares of each series and any of its qualifications, limitations or restrictions, in each case without further vote or action by our stockholders. Each series of preferred stock offered by us will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of our liquidation, dissolution or winding up, voting rights and rights to convert into common stock.

Debt Securities

We may offer secured or unsecured obligations in the form of one or more series of senior or subordinated debt. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as the "debt securities." The subordinated debt securities generally will be entitled to payment only after payment of our senior debt. Senior debt generally

includes all debt for money borrowed by us, except debt that is stated in the instrument governing the terms of that debt to be not senior to, or to have the same rank in right of payment as, or to be expressly junior to, the subordinated debt securities. We may issue debt securities that are convertible into shares of our common stock.

The debt securities will be issued under an indenture between us and a trustee to be identified in an accompanying prospectus supplement. We have summarized the general features of the debt securities to be governed by the indenture in this prospectus and the form of indenture has been filed as an exhibit to the registration statement of which this prospectus forms a part. We encourage you to read the indenture.

Warrants

We may offer warrants for the purchase of common stock, preferred stock or debt securities. We may offer warrants independently or together with other securities.

Subscription Rights

We may offer subscription rights to purchase our common stock, preferred stock, debt securities, warrants or units consisting of some or all of these securities. These subscription rights may be offered independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the subscription rights in such offering.

Purchase Contracts

We may offer purchase contracts, including contracts obligating holders or us to purchase from the other a specific or variable number of securities at a future date or dates.

Units

We may offer units comprised of one or more of the other classes of securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit.

Implications of Being a Smaller Reporting Company

We are a "smaller reporting company" as defined in Rule 12b-2 promulgated under the Exchange Act. We may remain a smaller reporting company until we have a non-affiliate public float in excess of \$250.0 million and annual revenues in excess of \$100.0 million, or a non-affiliate public float in excess of \$700.0 million, each as determined on an annual basis. A smaller reporting company may take advantage of relief from some of the reporting requirements and other burdens that are otherwise applicable generally to public companies. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

RISK FACTORS

Investing in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the section in the applicable prospectus supplement captioned "Risk Factors," together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under "Part I—Item 1A—Risk Factors" of our most recent Annual Report on Form 10-K and in "Part II—Item 1A—Risk Factors" in our most recent Quarterly Report on Form 10-Q filed subsequent to such Form 10-K or Current Reports on Form 8-K we file after the date of this prospectus, that are incorporated herein by reference, as may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain certain statements that constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "could," "would," "project," "plan," "potentially," "likely," and similar expressions and variations thereof are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Those statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections captioned "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and include statements regarding the intent, belief or current expectations of our management that are subject to known and unknown risks, uncertainties and assumptions. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those projected in the forward-looking statements as a result of various factors.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and although 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 a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

This prospectus and the documents incorporated by reference in this prospectus may contain market data that we obtain from industry sources. These sources do not guarantee the accuracy or completeness of the information. Although we believe that our industry sources are reliable, we do not independently verify the information. The market data may include projections that are based on a number of other projections. While we believe these assumptions to be reasonable and sound as of the date of this prospectus, actual results may differ from the projections.

USE OF PROCEEDS

We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any securities. We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Pending our use of the net proceeds from the sale of our securities, we intend to invest the net proceeds in bank deposits, money market funds, treasury obligations, and investment-grade securities.

DESCRIPTION OF CAPITAL STOCK

The following descriptions of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws. Copies of these documents have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

Our authorized capital stock consists of 1,000,000,000 shares of common stock, par value \$0.00001 per share, and 5,000,000 shares of preferred stock, par value \$0.00001 per share. The number of beneficial stockholders is substantially greater than the number of stockholders of record as a large portion of our common stock is held through brokerage firms.

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights. Because of this, the holders of a plurality of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

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

Liquidation

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

Rights and Preferences

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

Fully Paid and Nonassessable

All of our outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in our control or other corporate action.

The preferred stock we may issue will be fully paid and nonassessable upon issuance.

Registration Rights

Certain holders of our common stock are entitled to certain registration rights pursuant to our investors' rights agreement, as amended. Holders of such shares of our common stock have the right to require us to register the offer and sale of their shares or to include their shares in any registration statement we file, in each case as described below.

Demand Registration Rights

Certain holders of shares of our common stock are entitled to certain demand registration rights. At any time beginning after 180 days following the date of our initial public offering, the holders of at least 30% of the shares having registration rights then outstanding can request that we file a registration statement to register the offer and sale of their shares. We are only obligated to effect up to two such registrations. Each such request for registration must cover securities the anticipated aggregate gross proceeds of which, after deducting underwriting discounts and expenses, is at least \$5 million. These demand registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances. If we determine that it would be materially detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than twice in any twelve-month period, for a period of up to 90 days.

Form S-3 Registration Rights

Certain holders of shares of our common stock are entitled to certain Form S-3 registration rights. When we are eligible to file a registration statement on Form S-3, the holders of the shares having these rights then outstanding can request that we register the offer and sale of their shares of our common stock on a registration statement on Form S-3 so long as the request covers securities the anticipated aggregate public offering price of which is at least \$5 million. These stockholders may make an unlimited number of requests for registration on a registration statement on Form S-3. However, we will not be required to effect a registration on Form S-3 if we have effected two such registrations within the twelve-month period preceding the date of the request. These Form S-3 registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances. Additionally, if we determine that it would be seriously detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than twice in any twelve-month period, for a period of up to 90 days.

Piggyback Registration Rights

Certain holders of shares of our common stock are entitled to certain "piggyback" registration rights. If we propose to register the offer and sale of shares of our common stock under the Securities Act, all holders of these

shares then outstanding can request that we include their shares in such registration, subject to certain marketing and other limitations, including the right of the underwriters to limit the number of shares included in any such registration statement under certain circumstances. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to (i) a registration related to any employee benefit plan, (ii) a registration relating to the offer and sale of debt securities, (iii) a registration relating to a corporate reorganization or other transaction covered by Rule 145 promulgated under the Securities Act, (iv) a registration on any registration form that does not permit secondary sales or (v) a registration pursuant to the demand or Form S-3 registration rights described in the preceding two paragraphs above, the holders of these shares are entitled to notice of the registration and have the right, subject to certain limitations, to include their shares in the registration.

Expenses of Registration

We will pay all expenses relating to any demand registrations, Form S-3 registrations and piggyback registrations, subject to specified exceptions.

Termination

The registration rights terminate upon the earliest of (i) September 29, 2025, (ii) immediately prior to the completion of certain liquidation events and (iii) as to a given holder of registration rights, the date after the closing of our initial public offering when such holder of registration rights can sell all of such holder's registrable securities during any 90-day period pursuant to Rule 144 promulgated under the Securities Act.

Anti-Takeover Effects of Certain Provisions of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Certain provisions of the General Corporation Law of the State of Delaware, or DGCL, and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws summarized below may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Classified Board

Our amended and restated certificate of incorporation provides that our board of directors is divided into three classes, designated Class I, Class II and Class III. Each class contains an equal number of directors, as nearly as possible, consisting of one third of the total number of directors constituting the entire board of directors. The directors in each class serve for a three-year term, one class being elected each year by our stockholders, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

Removal of Directors

Our amended and restated certificate of incorporation provides that stockholders may only remove a director for cause by a vote of no less than a majority of the shares present in person or by proxy at a meeting of stockholders and entitled to vote.

Director Vacancies

Our amended and restated certificate of incorporation authorizes only our board of directors to fill vacant directorships.

No Cumulative Voting

Our amended and restated certificate of incorporation provides that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders

Our amended and restated certificate of incorporation and amended and restated bylaws provide that, except as otherwise required by law or subject to the terms of any series of preferred stock, special meetings of the stockholders may be called only by the chairperson of our board of directors, our Chief Executive Officer, our President or our board of directors acting pursuant to a resolution adopted by a majority of our board of directors.

Advance Notice Procedures for Director Nominations

Our bylaws provide that stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders or seeking to propose matters that can be acted upon by stockholders at annual stockholder meetings must provide timely notice thereof in writing. To be timely, a stockholder's notice generally must be delivered to and received at our principal executive offices before notice of the meeting is issued by the secretary of the company, with such notice being served not less than 90 nor more than 120 days before the meeting. Although our amended and restated bylaws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, our amended and restated bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the Company.

Action by Written Consent

Our amended and restated certificate of incorporation and amended and restated bylaws provide that any action to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by written consent.

Amending our Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation may be amended or altered in any manner provided by the DGCL, except that amendment of certain provisions would require the approval of two-thirds of our then outstanding common stock. Our amended and restated bylaws may be adopted, amended, altered or repealed by stockholders only upon approval of at least majority of the voting power of all the then outstanding shares of the common stock, except for any amendment of certain provisions, which would require the approval of a two-thirds majority of our then outstanding common stock. Additionally, our amended and restated certificate of incorporation provides that our bylaws may be amended, altered or repealed by the board of directors.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock will be available for future issuances without stockholder approval, except as required by the listing standards of Nasdaq, and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of the company by means of a proxy contest, tender offer, merger or otherwise.

Exclusive Jurisdiction

Our amended and restated bylaws provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any derivative action or

proceeding brought on our behalf, any action asserting a claim of breach of fiduciary duty, any action asserting a claim arising pursuant to the DGCL, any action regarding our amended and restated certificate of incorporation or amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. Our amended and restated bylaws further provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to these provisions. Although we believe these provisions benefit us by providing increased consistency in the application of law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors and officers. We note that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

Business Combinations with Interested Stockholders

We are governed by Section 203 of the DGCL, which, subject to certain exceptions, prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an "interested stockholder" (defined generally as any person who beneficially owns 15% or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless (i) prior to such time the board of directors of such corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (ii) upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder owned at least 85% of the voting stock of such corporation at the time the transaction commenced (excluding for purposes of determining the voting stock of such corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (A) by persons who are directors and also officers of such corporation and (B) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer); or (iii) at or subsequent to such time the business combination is approved by the board of directors of such corporation and authorized at a meeting of stockholders (and not by written consent) by the affirmative vote of at least 66 2/3% of the outstanding voting stock of such corporation not owned by the interested stockholder.

Limitation on Liability and Indemnification

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that we must indemnify our directors and officers to the fullest extent authorized by the DGCL. We are expressly authorized to, and do, carry directors' and officers' insurance providing coverage for our directors, officers and certain employees for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and executive directors.

The limitation on liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. In addition, your investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Listing

Our common stock is listed on the Nasdaq Global Select Market under the symbol "PMVP."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 6201 15th Avenue, Brooklyn, New York 11219. The transfer agent and registrar's phone number is 800-937-5449.

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a trustee to be identified in an accompanying prospectus supplement. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement of which this prospectus forms a part and you should read the indenture for provisions that may be important to you. In the summary below, we have included references to the section numbers of the indenture so that you can easily locate these provisions. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer's certificate or by a supplemental indenture. The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit upon the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;
- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;

- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a
 holder of debt securities and the period or periods within which, the price or prices at which and the terms and conditions upon which
 securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the
 principal amount;
- the currency of denomination of the debt securities, which may be United States dollars or any foreign currency, and if such currency of
 denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- the designation of the currency, currencies or currency units in which payment of principal of, premium and interest on the debt securities will be made;
- if payments of principal of, premium or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined:
- the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
- any provisions relating to any security provided for the debt securities;
- any addition to, deletion of or change in the Events of Default described in this prospectus, any applicable prospectus supplement or in the
 indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus, any applicable
 prospectus supplement or in the indenture with respect to the debt securities;
- any addition to, deletion of or change in the covenants described in this prospectus, any applicable prospectus supplement or in the indenture with respect to the debt securities;
- · any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
- any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
- whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt securities

is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of a clearing agency registered under the Exchange Act, which we refer to as the depositary, or a nominee of the depositary (we will refer to any debt security represented by a global debt security as a "book-entry debt security"), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a "certificated debt security") as set forth in the applicable prospectus supplement. Except as set forth under the heading "Global Debt Securities and Book-Entry System" below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities

You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange.

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System

Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the depositary, and registered in the name of the depositary or a nominee of the depositary.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person, which we refer to as a successor person, unless:

• we are the surviving corporation or the successor person (if other than us) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on the debt securities and under the indenture; and

immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us.

Events of Default

"Event of Default" means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee, or we and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- · certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of us; and
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiaries outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof.

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. We refer you to the applicable prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions

relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series;
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall send to each securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading "Consolidation, Merger and Sale of Assets";
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or events of default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depositary;

- to make any change that does not adversely affect the rights of any holder of debt securities;
- · to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the
 provisions of the indenture to provide for or facilitate administration by more than one trustee; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act.

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, premium or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance

The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series

(subject to certain exceptions). We will be so discharged upon the irrevocable deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred.

Defeasance of Certain Covenants

The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described under the heading "Consolidation, Merger and Sale of Assets" and certain other
 covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement;
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series.

We refer to this as covenant defeasance. The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency
 other than U.S. dollars, government obligations of the government that issued or caused to be issued such currency, that, through the
 payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally
 recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium and
 interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those
 payments in accordance with the terms of the indenture and those debt securities;
- such deposit will not result in a breach or violation of, or constitute a default under the indenture or any other agreement to which we are a party;
- no Default or Event of Default with respect to the applicable series of debt securities shall have occurred or is continuing on the date of such deposit; and
- delivering to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred.

No Personal Liability of Directors, Officers, Employees or Stockholders

None of our past, present or future directors, officers, employees or stockholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability. This waiver and release is part of the consideration for the issue of the debt securities. However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party's address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase debt securities, preferred stock, depositary shares or common stock. We may offer warrants separately or together with one or more additional warrants, debt securities, preferred stock, depositary shares or common stock, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. If we issue warrants as part of a unit, the applicable prospectus supplement will specify whether those warrants may be separated from the other securities in the unit prior to the expiration date of the warrants. The applicable prospectus supplement will also describe the following terms of any warrants:

- the specific designation and aggregate number of, and the offering price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants are to be sold separately or with other securities as parts of units;
- whether the warrants will be issued in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- the designation and terms of any equity securities purchasable upon exercise of the warrants;
- the designation, aggregate principal amount, currency and terms of any debt securities that may be purchased upon exercise of the warrants:
- if applicable, the designation and terms of the debt securities, preferred stock, depositary shares or common stock with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which any warrants issued as part of a unit and the related debt securities, preferred stock, depositary shares or common stock will be separately transferable;
- the number of shares of preferred stock, the number of depositary shares or the number of shares of common stock purchasable upon exercise of a warrant and the price at which those shares may be purchased;
- · if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the antidilution provisions, and other provisions for changes to or adjustment in the exercise price, of the warrants, if any;
- any redemption or call provisions; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange or exercise of the warrants.

DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue subscription rights to purchase our common stock, preferred stock, debt securities, depositary shares, warrants or units consisting of some or all of these securities. These subscription rights may be offered independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

The prospectus supplement relating to any subscription rights we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the price, if any, for the subscription rights;
- the exercise price payable for our common stock, preferred stock, debt securities, depositary shares, warrants or units consisting of some or all of these securities upon the exercise of the subscription rights;
- the number of subscription rights to be issued to each stockholder;
- the number and terms of our common stock, preferred stock, debt securities, depositary shares, warrants or units consisting of some or all of these securities which may be purchased per each subscription right;
- the extent to which the subscription rights are transferable;
- any other terms of the subscription rights, including the terms, procedures and limitations relating to the exchange and exercise of the subscription rights;
- the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;
- the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities or an overallotment privilege to the extent the securities are fully subscribed; and
- if applicable, the material terms of any standby underwriting or purchase arrangement which may be entered into by us in connection with the offering of subscription rights.

The descriptions of the subscription rights in this prospectus and in any prospectus supplement are summaries of the material provisions of the applicable subscription right agreements. These descriptions do not restate those subscription right agreements in their entirety and may not contain all the information that you may find useful. We urge you to read the applicable subscription right agreements because they, and not the summaries, define your rights as holders of the subscription rights. For more information, please review the forms of the relevant subscription right agreements, which will be filed with the SEC promptly after the offering of subscription rights and will be available as described in the section of this prospectus captioned "Where You Can Find More Information."

DESCRIPTION OF PURCHASE CONTRACTS

The following description summarizes the general features of the purchase contracts that we may offer under this prospectus. Although the features we have summarized below will generally apply to any future purchase contracts we may offer under this prospectus, we will describe the particular terms of any purchase contracts that we may offer in more detail in the applicable prospectus supplement. The specific terms of any purchase contracts may differ from the description provided below as a result of negotiations with third parties in connection with the issuance of those purchase contracts, as well as for other reasons. Because the terms of any purchase contracts we offer under a prospectus supplement may differ from the terms we describe below, you should rely solely on information in the applicable prospectus supplement if that summary is different from the summary in this prospectus.

We will incorporate by reference into the registration statement of which this prospectus is a part the form of any purchase contract that we may offer under this prospectus before the sale of the related purchase contract. We urge you to read any applicable prospectus supplement related to specific purchase contracts being offered, as well as the complete instruments that contain the terms of the securities that are subject to those purchase contracts. Certain of those instruments, or forms of those instruments, have been filed as exhibits to the registration statement of which this prospectus is a part, and supplements to those instruments or forms may be incorporated by reference into the registration statement of which this prospectus is a part from reports we file with the SEC.

We may issue purchase contracts, including contracts obligating holders to purchase from us, and for us to sell to holders, a specific or variable number of our securities at a future date or dates. Alternatively, the purchase contracts may obligate us to purchase from holders, and obligate holders to sell to us, a specific or varying number of our securities.

If we offer any purchase contracts, certain terms of that series of purchase contracts will be described in the applicable prospectus supplement, including, without limitation, the following:

- the price of the securities or other property subject to the purchase contracts (which may be determined by reference to a specific formula described in the purchase contracts);
- whether the purchase contracts are issued separately, or as a part of units each consisting of a purchase contract and one or more of our other securities, including U.S. Treasury securities, securing the holder's obligations under the purchase contract;
- · any requirement for us to make periodic payments to holders or vice versa, and whether the payments are unsecured or pre-funded;
- any provisions relating to any security provided for the purchase contracts;
- whether the purchase contracts obligate the holder or us to purchase or sell, or both purchase and sell, the securities subject to purchase under the purchase contract, and the nature and amount of each of those securities, or the method of determining those amounts;
- whether the purchase contracts are to be prepaid or not;
- whether the purchase contracts are to be settled by delivery, or by reference or linkage to the value, performance or level of the securities subject to purchase under the purchase contract;
- any acceleration, cancellation, termination or other provisions relating to the settlement of the purchase contracts;
- a discussion of certain U.S. federal income tax considerations applicable to the purchase contracts;
- whether the purchase contracts will be issued in fully registered or global form; and
- ullet any other terms of the purchase contracts and any securities subject to such purchase contracts.

DESCRIPTION OF UNITS

We may issue units comprising two or more securities described in this prospectus in any combination. For example, we might issue units consisting of a combination of debt securities and warrants to purchase common stock. The following description sets forth certain general terms and provisions of the units that we may offer pursuant to this prospectus. The particular terms of the units and the extent, if any, to which the general terms and provisions may apply to the units so offered will be described in the applicable prospectus supplement.

Each unit will be issued so that the holder of the unit also is the holder of each security included in the unit. Thus, the unit will have the rights and obligations of a holder of each included security. Units will be issued pursuant to the terms of a unit agreement, which may provide that the securities included in the unit may not be held or transferred separately at any time or at any time before a specified date. A copy of the forms of the unit agreement and the unit certificate relating to any particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the unit agreement and the related unit certificate, see the section of this prospectus captioned "Where You Can Find More Information."

The prospectus supplement relating to any particular issuance of units will describe the terms of those units, including, to the extent applicable, the following:

- the designation and terms of the units and the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provision for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- whether the units will be issued in fully registered or global form.

PLAN OF DISTRIBUTION

We may sell our securities from time to time in one or more transactions. We may sell securities to or through underwriters, dealers, agents, remarketing firms or other third parties to directly to one or more purchasers or through a combination of any of these methods. We may issue the securities as a dividend or distribution or in a subscription rights offering to our existing securityholders, if legally permitted. In some cases, we or dealers acting with us or on behalf of us may also purchase our securities and reoffer them to the public. We may also offer and sell, or agree to deliver, our securities pursuant to, or in connection with, any option agreement or other contractual arrangement.

We may directly solicit offers to purchase securities or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act and describe any commissions that we must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) of the Securities Act.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price or prices that may be changed from time to time;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- · at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price;
- any discounts and commissions to be allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- · any discounts and commissions to be allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

If a dealer is utilized in the sale of the securities in respect of which the prospectus supplement is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

If we offer securities in a subscription rights offering to our existing securityholders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Agents, underwriters, dealers and other persons may be entitled under agreements that they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act.

If so indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and
- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery.

The underwriters and other persons acting as agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Certain agents, underwriters and dealers, and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or one or more of our respective affiliates in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may over-allot in connection with the offering, creating a short position for their own accounts. In addition, to cover over-allotments or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. The applicable prospectus supplement may provide that the original issue date for your securities may be more than two scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than three scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

The securities may be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

LEGAL MATTERS

The validity of the securities offered hereby on behalf of PMV Pharmaceuticals, Inc. will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Certain members of, and investment partnerships comprised of members of, and persons associated with, Wilson Sonsini Goodrich & Rosati, Professional Corporation own less than one percent of our common stock. Additional legal matters may be passed on for us, or any underwriters, dealers or agents by counsel we will name in the applicable prospectus supplement.

EXPERTS

The financial statements of PMV Pharmaceuticals, Inc. appearing in PMV Pharmaceuticals, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2022, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Ernst & Young LLP pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at https://www.pmvpharma.com/. Information contained on, or that can be accessible through, our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

This prospectus and any prospectus supplement is part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. You should review the information and exhibits in the registration statement for further information on us and the securities that we are offering. Forms of any indenture or other documents establishing the terms of the offered securities are filed as exhibits to the registration statement of which this prospectus forms a part or under cover of a Current Report on Form 8-K and incorporated in this prospectus by reference. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should read the actual documents for a more complete description of the relevant matters.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information that we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents furnished, rather than filed, including Items 2.02 or 7.01 of any Current Report on Form 8-K and, except as may be noted in any such Form 8-K, exhibits filed on

such form that are related to such information), until the offering of the securities under the registration statement of which this prospectus forms a part is terminated or completed:

- our Annual Report on Form <u>10-K</u> for the year ended December 31, 2022, filed with the SEC on March 1, 2023;
- the portions of our Definitive Proxy Statement on Schedule 14A (other than information furnished rather than filed) that are incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on April 22, 2022; and
- the description of our common stock contained in the Registration Statement on Form 8-A relating thereto, filed on September 21, 2020, as updated by the description of our common stock contained in Exhibit 4.1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 3, 2021, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

PMV Pharmaceuticals, Inc. 1 Research Way Princeton, New Jersey 08536 Attn: Investor Relations (609) 642-6670



PMV Pharmaceuticals, Inc.

Up to \$200,000,000

Common Stock
Preferred Stock
Debt Securities
Warrants
Subscription Rights
Purchase Contracts
Units

PROSPECTUS

, 2023

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

Subject to Completion, dated March 1, 2023

PROSPECTUS SUPPLEMENT



Up to \$150,000,000 Shares of Common Stock

We previously entered into an Open Market Sale AgreementSM, or sales agreement, with Jefferies LLC, or Jefferies, relating to shares of our common stock offered by this prospectus supplement. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$150.0 million from time to time to or through Jefferies as our sales agent. We originally filed a prospectus supplement, dated October 4, 2021, or the Prior ATM Prospectus Supplement, for the offer and sale of up to \$150.0 million of shares of our common stock, from time to time through Jefferies, acting as our sales agent, pursuant to the sales agreement under the automatic shelf registration statement on Form S-3ASR (Registration Statement No. 333-260012). As of the date of this prospectus, we have not issued and sold any shares of our common stock pursuant to the sales agreement and the Prior ATM Prospectus Supplement. The common stock remaining available to be sold under the Prior ATM Prospectus Supplement as of the date of this prospectus will no longer be offered and sold under the Prior ATM Prospectus Supplement, but will instead be offered and sold under this prospectus. Accordingly, we may offer and shell shares of our common stock having an aggregate offering price of up to \$150.0 million.

Our common stock is traded on the Nasdaq Global Select Market under the symbol "PMVP." On February 24, 2023, the last reported sale price of our common stock was \$7.16 per share.

Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be "at the market offerings" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act. Jefferies is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Jefferies and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Jefferies for sales of common stock sold pursuant to the sales agreement will be equal to 3.0% of the gross proceeds of any shares of common stock sold under the sales agreement. See "Plan of Distribution" beginning on page S-12 for additional information regarding Jefferies' compensation. In connection with the sale of the common stock on our behalf, Jefferies will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Jefferies with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act.

INVESTING IN OUR COMMON STOCK INVOLVES SIGNIFICANT RISKS. YOU SHOULD REVIEW CAREFULLY THE "RISK FACTORS" ON PAGE S-5 OF THIS PROSPECTUS SUPPLEMENT, AND IN THE ACCOMPANYING PROSPECTUS AND IN THE DOCUMENTS INCORPORATED BY REFERENCE IN THIS PROSPECTUS SUPPLEMENT THAT WE FILE WITH THE SECURITIES AND EXCHANGE COMMISSION BEFORE INVESTING IN OUR COMMON STOCK.

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

Jefferies

The date of this prospectus supplement is , 2023

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement relates to the offering of our common stock. Before buying any of the common stock that we are offering, we urge you to carefully read this prospectus supplement, the accompanying prospectus, any free writing prospectus that we have authorized for use in connection with this offering, and the information incorporated by reference as described under the headings "Where You Can Find More Information" and "Incorporation by Reference" in this prospectus supplement. These documents contain important information that you should consider when making your investment decision. Generally, when we refer to this "prospectus," we are referring to the prospectus supplement and the accompanying prospectus combined.

This prospectus supplement describes the terms of this offering of common stock and also adds to and updates information contained in the documents incorporated by reference into this prospectus supplement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference into this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We have not, and Jefferies has not, authorized anyone to provide you with information different than or inconsistent with the information contained in or incorporated by reference into this prospectus supplement or in any free writing prospectus that we have authorized for use in connection with this offering. We and Jefferies take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and Jefferies is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement and the documents incorporated by reference into this prospectus supplement, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the documents incorporated by reference into this prospectus supplement, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you to in the section of this prospectus supplement titled "Incorporation by Reference."

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of our common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

PROSPECTUS SUPPLEMENT SUMMARY

The following summary of our business highlights certain of the information contained elsewhere in, or incorporated by reference into, this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that may be important to you. You should carefully read this entire prospectus supplement and the accompanying prospectus, including any information incorporated by reference, which are described under the headings "Where You Can Find More Information" and "Incorporation by Reference" herein and therein. In particular, you should carefully consider the risks and uncertainties described under the heading "Risk Factors" in this prospectus supplement and in the accompanying prospectus, as well as those contained in the other documents incorporated by reference and any related free writing prospectus. As used in this prospectus supplement, unless the context otherwise requires, references to "we," "us," "our," "our company," and "PMV" refer to PMV Pharmaceuticals, Inc.

Overview

We are a precision oncology company pioneering the discovery and development of small molecule, tumor-agnostic therapies targeting p53. p53 is a well-defined tumor suppressor protein known as the "guardian of the genome," and normal, or wild-type, p53 has the ability to eliminate cancer cells. However, mutant p53 proteins can be misfolded and lose their wild-type tumor suppressing function. These p53 mutations are found in approximately half of all cancers. The field of p53 biology was established by our co-founder Dr. Arnold Levine when he discovered the p53 protein in 1979. We have leveraged more than four decades of research experience and developed unique insights into p53 to create a precision oncology platform designed to generate selective, small molecule, tumor-agnostic therapies that structurally correct specific mutant p53 proteins to restore their wild-type function. We are deploying our precision oncology platform to target the top ten most frequent, or hotspot, p53 mutations that are collectively associated with approximately 10-15% of all cancers. In addition, we continue to utilize our platform to target other p53-related cancers.

Our lead product candidate, PC14586, is an orally available small molecule designed to potently and selectively correct p53 misfolding caused by a specific p53 mutation, Y220C, while sparing wild-type p53. The Y220C mutation is associated with 1.0-1.5% of all cancers, including breast, non-small cell lung cancer, or NSCLC, colorectal, pancreatic and ovarian cancers. PC14586 is designed to restore the wild-type conformation by occupying the crevice created by the tyrosine to cysteine mutation in amino acid position 220. While we are in the early stages of discovery and development of our product candidates and our novel approach is unproven, we are initially pursuing a tumor-agnostic development strategy and initiated a Phase 1/2 clinical trial in October 2020. Our strategy is to seek approval under an accelerated pathway, and we believe our Phase 1/2 clinical trial has the potential to serve as a pivotal study. In October 2020, we were granted U.S. Food and Drug Administration, or FDA, Fast Track designation of PC14586 for the treatment of patients with locally advanced or metastatic solid tumors that have a p53 Y220C mutation. We presented our preliminary Phase 1 clinical data in June 2022 and we continue to enroll patients in this trial. In December 2022, we opened a separate arm within the existing Phase 1/2 clinical trial combining PC14586 with KEYTRUDA® (pembrolizumab) in collaboration with Merck and Co. In addition, we are leveraging our precision oncology platform to develop a pipeline of oral small molecule product candidates that structurally correct other p53 hotspot mutations to restore their wild-type function and product candidates that target other p53-related cancers.

A better understanding of mutations that drive cancers have facilitated the development of precise, gene- and protein-specific drugs known as targeted therapies. Targeted therapies have the potential to transform treatment of some cancers by providing robust clinical benefit to patients. In many cases, clinical responses can be dramatic enough to support expedited regulatory approval of these therapies. Further, recent advancements in next-generation-sequencing, or genomic NGS, have accelerated the development of targeted therapies. A recent study found that 75% of oncologists in the United States employ genetic sequencing. We believe p53 mutations

are particularly well-suited for the evolving precision oncology paradigm, as a single mutation can cause p53 malfunction, and p53 is one of the genes commonly sequenced, to our knowledge, in NGS panels. We believe that our precision oncology platform offers a substantial opportunity to expand the number of patients who will benefit from targeted therapies.

Our innovation engine consists of three complementary drivers:

- deep understanding of, and leadership in, p53 biology that enable unique insights into drugging individual mutations as well as targeting other p53-related cancers;
- · ability to design on a structural basis selective, oral small molecule product candidates; and
- assays, screens, preclinical model systems and biomarkers that enable us to assess and optimize orally available selective small molecule drug product candidates for specific p53 mutants, and for inhibitors of wild-type p53 function.

Corporate Information

We were incorporated in Delaware in March 2013 under the name "PJ Pharmaceuticals, Inc." In July 2013, we changed our name to "PMV Pharmaceuticals, Inc." Our principal executive offices are located at 1 Research Way, Princeton, New Jersey 08536. Our telephone number is (609) 642-6670. Our website address is www.pmvpharma.com. Information contained on, or that can be accessible through, our website is not a part of this prospectus supplement and the inclusion of our website address in this prospectus supplement is an inactive textual reference only.

Implications of Being a Smaller Reporting Company

We are a "smaller reporting company" as defined in Rule 12b-2 promulgated under the Exchange Act. We may remain a smaller reporting company until we have a non-affiliate public float in excess of \$250.0 million and annual revenues in excess of \$100.0 million, or a non-affiliate public float in excess of \$700.0 million, each as determined on an annual basis. A smaller reporting company may take advantage of relief from some of the reporting requirements and other burdens that are otherwise applicable generally to public companies. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

THE OFFERING

Common Stock Offered by Us Shares of our common stock having an aggregate offering price of up to \$150.0 million.

Common Stock Outstanding After this Offering

Up to 66,721,052 shares, assuming the sale of 20,949,720 shares of our common stock in this offering at an offering price of \$7.16 per share, which was the closing price of our

common stock on the Nasdaq Global Select Market on February 24, 2023. The actual number of shares issued will vary depending on the sales price under this offering.

Plan of Distribution "At the market offering" that may be made from time to time through our sales agent,

Jefferies. See "*Plan of Distribution*" on page S-12.

Use of Proceeds We currently anticipate that we will use the net proceeds from this offering, together with

our existing cash, cash equivalents and short-term marketable securities, for general corporate purposes, which may include clinical trial and other research and development expenses, commercialization expenses, capital expenditures, working capital and general and administrative expenses, and potential acquisitions or investments in businesses, products and technologies that complement our business. See "Use of Proceeds" on page

S-9.

Risk Factors Investing in our common stock involves significant risks. You should read the "Risk

Factors" section of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement and accompanying prospectus for a discussion of

factors to consider before deciding to purchase shares of our common stock.

Nasdaq Global Select Market Symbol "PMVP"

The number of our shares of common stock outstanding after this offering is based on 45,771,332 shares of our common stock outstanding as of December 31, 2022, and excludes:

- 5,278,771 shares of our common stock issuable upon the exercise of options outstanding as of December 31, 2022, with a weighted-average exercise price of \$10.40 per share;
- 50,000 shares of common stock issuable upon the exercise of options that we granted after December 31, 2022, with a weighted-average exercise price of \$8.05 per share;
- 4,618,292 shares of common stock reserved for future issuance under our 2020 Equity Incentive Plan as of December 31, 2022, as
 well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan; and
- 705,559 shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan as of December 31, 2022, as well as any automatic increases in the number of our common stock reserved for future issuances under this plan.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of outstanding options after December 31, 2022.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before making a decision to invest in our common stock, you should consider carefully the risks and uncertainties described under the heading "Risk Factors" contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, including the risk factors incorporated by reference herein from our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 and in our subsequent quarterly reports on Form 10-Q and annual reports on Form 10-K, as updated by our subsequent filings under the Securities and Exchange Act of 1934, as amended, each of which is incorporated by reference in this prospectus supplement in their entirety, together with other information in this prospectus supplement, and the information and documents incorporated by reference in this prospectus supplement, and any free writing prospectus that we have authorized for use in connection with this offering before you make a decision to invest in our common stock. The risks described in these documents are not the only ones we face. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could harm our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below titled "Special Note Regarding Forward-Looking Statements."

Risks Related to This Offering

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

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section titled "*Use of Proceeds*," and you will be relying on the judgment of our management regarding the application of these proceeds. You will not have the opportunity, as part of your investment decision, to assess whether the net proceeds are being used appropriately. Our management might not apply the net proceeds in ways that ultimately increase or maintain the value of your investment. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the net tangible book value of your shares.

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 20,949,720 shares of our common stock are sold at a price of \$7.16 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on February 24, 2023, for aggregate gross proceeds of \$150.0 million, and after deducting commissions and estimated offering expenses payable by us, you would experience immediate dilution of \$1.30 per share, representing the difference between our as adjusted net tangible book value per share as of December 31, 2022 after giving effect to this offering and the assumed offering price. The exercise of outstanding stock options would result in further dilution of your investment. See the section titled "Dilution" below for a more detailed illustration of the dilution you would incur if you participate in this offering. Because the sales of the shares offered hereby will be made directly into the market or in negotiated transactions, the prices at which we sell these shares will vary and these variations may be significant. Purchasers of the shares we sell, as well as our existing stockholders, will experience significant dilution if we sell shares at prices significantly below the price at which they invested

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we expect to in the future offer additional shares of common stock or other securities convertible into or exchangeable for our shares of common stock. We cannot assure you that we

will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of common stock or other securities convertible into or exchangeable for our shares of common stock in future transactions may be higher or lower than the price per share in this offering.

The actual number of shares we will issue under the sales agreement in this offering, at any one time or in total, is uncertain.

Subject to certain limitations in the sales agreement and compliance with applicable law, we have the discretion to deliver a placement notice to Jefferies at any time throughout the term of the offering under this prospectus supplement. The number of shares that are sold by Jefferies after delivering a placement notice will fluctuate based on the market price of the shares of common stock during the sales period and limits we set with Jefferies. Because the price per share of each share sold will fluctuate based on the market price of our common stock during the sales period, it is not possible at this stage to predict the number of shares that will be ultimately issued or the gross proceeds to be raised in connection with those sales.

Future sales or issuances of our common stock in the public markets, or the perception of such sales, could depress the trading price of our common stock.

The sale of a substantial number of shares of our common stock or other equity-related securities in the public markets, or the perception that such sales could occur, could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. We may sell large quantities of our common stock at any time pursuant to this prospectus supplement or in one or more separate offerings. We cannot predict the effect that future sales of common stock or other equity-related securities would have on the market price of our common stock.

The common stock offered hereby will be sold in "at the market" offerings, and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no predetermined minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

Our stock price is and may continue to be volatile and you may not be able to resell our securities at or above the price you paid.

The market price for our common stock is volatile and may fluctuate significantly in response to a number of factors, most of which we cannot control, such as quarterly fluctuations in financial results, the timing and our ability to advance the development of our product candidates or changes in securities analysts' recommendations. Each of these factors, among others, could harm your investment in our common stock and could result in your being unable to resell the common stock that you purchase at a price equal to or above the price you paid.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompany prospectus, including the documents incorporated or deemed to be incorporated by reference into this prospectus supplement and the accompanying prospectus, contain forward-looking statements. All statements other than statements of historical facts contained in this prospectus supplement, including statements regarding our future results of operations and financial position, business strategy, plans for our product candidates, planned preclinical studies and clinical trials, results of clinical trials, future research and development costs, regulatory approvals, timing and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that are in some cases beyond our control and may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "should," "would," "expect," "plan," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions. Forward-looking statements contained in this prospectus supplement include, but are not limited to, statements about:

- · our financial performance;
- the sufficiency of our existing cash, cash equivalents and short-term marketable securities to fund our future operating expenses and capital
 expenditure requirements;
- our need to raise additional funding before we can expect to generate any revenues from product sales;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- · our anticipated use of our existing cash, cash equivalents and short-term marketable securities and the proceeds from this offering;
- the implementation of our strategic plans for our business and product candidates;
- the size of the market opportunity for our product candidates and our ability to maximize those opportunities;
- the initiation, timing, progress and results of our research and development programs, preclinical studies, clinical trials and investigational new drug applications, and other regulatory submissions;
- the beneficial characteristics, safety, efficacy and therapeutic effects of our product candidates;
- our estimates of the number of patients expected to have certain p53 mutants and the number of participants that will enroll in our clinical trials:
- the ability of our clinical trials to demonstrate safety and efficacy of our product candidates, and other favorable results;
- our plans relating to the clinical development of our product candidates, including the disease areas to be evaluated;
- the timing, progress and focus of our clinical trials, and the reporting of data from those trials;
- our ability to obtain and maintain regulatory approval of our product candidates;
- our plans relating to commercializing our product candidates, if approved;
- the expected benefits of potential future strategic collaborations with third parties and our ability to attract collaborators with development, regulatory and commercialization expertise;
- the success of competing therapies that are or may become available;

- the timing or likelihood of regulatory filings and approvals, including our expectation to seek accelerated reviews or special designations, such as breakthrough therapy and orphan drug designation, for our product candidates, including our intention to seek accelerated approval for PC14586, our lead product candidate, for a tumor-agnostic indication;
- our plans relating to the further development and manufacturing of our product candidates, including for additional indications that we may pursue:
- existing regulations and regulatory developments in the United States and other jurisdictions;
- our plans and ability to obtain or protect intellectual property rights, including extensions of existing patent terms where available;
- our plan to rely on third parties to conduct and support preclinical and clinical development;
- our ability to retain the continued service of our key personnel and to identify, hire and then retain additional qualified personnel; and
- the impact of the ongoing COVID-19 pandemic, geopolitical tensions such as the Ukraine-Russia war, macroeconomic events such as
 global supply chain challenges, elevated inflation and interest rates and monetary policy changes, or other related disruptions on our
 business.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this prospectus supplement and are subject to a number of risks, uncertainties and assumptions described in the section titled "*Risk Factors*" and elsewhere in this prospectus supplement. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus supplement, 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 and you are cautioned not to unduly rely upon these statements.

You should read this prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$150.0 million from time to time. Because there is no minimum offering price for the shares that we may offer from time to time, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares under or fully utilize the sales agreement with Jefferies as a source of financing.

We currently intend to use any net proceeds from this offering for general corporate purposes, which may include clinical trial and other research and development expenses, commercialization expenses, capital expenditures, working capital and general and administrative expenses, and potential acquisitions of or investments in businesses, products and technologies that complement our business. While we have no current agreements, commitments or understandings for any specific acquisitions of or investments in businesses, products and technologies as of the date of this prospectus supplement, we may use a portion of the net proceeds for these purposes. The amounts and timing of our actual expenditures will depend on numerous factors, including our development efforts with respect to our product candidates, as well as the amount of cash used in our operations. We therefore cannot estimate with certainty the amount of net proceeds to be used for the purposes described above. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending these uses, we intend to invest any net proceeds in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DILUTION

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

Our net tangible book value as of December 31, 2022 was approximately \$246.1 million, or \$5.38 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of December 31, 2022. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering.

After giving effect to the sale of our common stock in the aggregate amount of \$150.0 million in this offering at an assumed offering price of \$7.16, the last reported sale price of our common stock on the Nasdaq Global Select Market on February 24, 2023, and after deducting commissions and estimated aggregate offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2022 would have been approximately \$391.5 million, or \$5.86 per share. This represents an immediate increase in net tangible book value of \$0.48 per share to existing stockholders and immediate dilution in net tangible book value of \$1.30 per share to new investors purchasing our common stock in this offering.

The following table illustrates this dilution on a per share basis. The as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed offering price per share		\$7.16
Net tangible book value per share as of December 31, 2022	\$5.38	
Increase in net tangible book value per share attributable to new investors	\$0.48	
As adjusted net tangible book value per share after this offering	<u></u>	\$5.86
Dilution per share to investors in this offering		\$1.30

The shares subject to the sales agreement with Jefferies are being sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$7.16 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$150.0 million during the term of the sales agreement with Jefferies is sold at that price, would increase our adjusted net tangible book value per share after the offering to \$6.10 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$2.06 per share, after deducting commissions and estimated offering expenses payable by us. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$7.16 per share shown in the table above, assuming all of our common stock in the amount of \$150.0 million during the term of the sales agreement with Jefferies is sold at that price, would decrease our adjusted net tangible book value per share after the offering to \$5.58 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$0.58 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only and may differ based on the actual offering price and the actual number of shares offered.

The foregoing table and calculations are based on 45,771,332 shares of our common stock outstanding as of December 31, 2022, and excludes:

- 5,278,771 shares of our common stock issuable upon the exercise of options outstanding as of December 31, 2022, with a weighted-average exercise price of \$10.40 per share;
- 50,000 shares of common stock issuable upon the exercise of options that we granted after December 31, 2022, with a weighted-average exercise price of \$8.05 per share;
- 4,618,292 shares of common stock reserved for future issuance under our 2020 Equity Incentive Plan as of December 31, 2022, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan; and
- 705,559 shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan as of December 31, 2022, as well as any automatic increases in the number of our common stock reserved for future issuances under this plan.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of outstanding options after December 31, 2022.

To the extent that outstanding options are exercised, investors purchasing our common stock in this offering will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have previously entered into a sales agreement with Jefferies, under which we may offer and sell up to \$150,000,000 of our shares of common stock from time to time through Jefferies acting as agent. The sales agreement has been incorporated by reference as an exhibit to our registration statement on Form S-3 of which this prospectus supplement forms a part. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act.

Each time we wish to issue and sell our shares of common stock under the sales agreement, we will notify Jefferies of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Jefferies, unless Jefferies declines to accept the terms of such notice, Jefferies has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Jefferies under the sales agreement to sell our shares of common stock are subject to a number of conditions that we must meet.

The settlement of sales of shares between us and Jefferies is generally anticipated to occur on the second trading day following the date on which the sale was made. Sales of our shares of common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Jefferies may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Jefferies a commission equal to 3.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In addition, we have agreed to reimburse Jefferies for the fees and disbursements of its counsel, payable upon execution of the sales agreement, in an amount not to exceed \$75,000, in addition to certain ongoing disbursements of its legal counsel. We estimate that the total expenses for the offering, excluding any commissions or expense reimbursement payable to Jefferies under the terms of the sales agreement, will be approximately \$404,405. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Jefferies will provide written confirmation to us before the open on the Nasdaq Global Select Market on the day following each day on which our shares of common stock are sold under the sales agreement. Each confirmation will include the number of shares sold on that day, the aggregate gross proceeds of such sales and the proceeds to us.

In connection with the sale of our shares of common stock on our behalf, Jefferies will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments Jefferies may be required to make in respect of such liabilities.

The offering of our shares of common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the sales agreement and (ii) the termination of the sales agreement as permitted therein. We and Jefferies may each terminate the sales agreement at any time upon ten days' prior notice.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement is filed as an exhibit to the registration statement of which this prospectus supplement forms a part.

Jefferies and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future receive customary fees. In the course of its business, Jefferies may actively trade our securities for its own account or for the accounts of customers, and, accordingly, Jefferies may at any time hold long or short positions in such securities.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Jefferies, and Jefferies may distribute the prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

The validity of the issuance of our common stock offered by this prospectus supplement will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Certain members of, and investment partnerships comprised of members of, and persons associated with, Wilson Sonsini Goodrich & Rosati, Professional Corporation, owns less than one percent of our common stock. Jefferies LLC is being represented in connection with this offering by Latham & Watkins LLP, Menlo Park, California.

EXPERTS

The financial statements of PMV Pharmaceuticals, Inc. appearing in PMV Pharmaceuticals, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2022, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Ernst & Young LLP pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at https://www.pmvpharma.com/. Information contained on, or that can be accessible through, our website is not a part of this prospectus supplement and the inclusion of our website address in this prospectus supplement is an inactive textual reference only.

This prospectus supplement and the accompany prospectus are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided in the section titled "Incorporation by Reference." Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information that we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus supplement is considered to be part of this prospectus supplement. Because we are incorporating by reference future filings with the SEC, this prospectus supplement is continually updated and those future filings may modify or supersede some of the information included or incorporated by reference in this prospectus supplement. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus supplement or in any document previously incorporated by reference have been modified or superseded. This prospectus supplement incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents furnished, rather than filed, including Items 2.02 or 7.01 of any Current Report on

Form 8-K and, except as may be noted in any such Form 8-K, exhibits filed on such form that are related to such information), until the offering of the securities under this prospectus supplement is terminated or completed:

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 1, 2023;
- the portions of our Definitive Proxy Statement on Schedule 14A (other than information furnished rather than filed) that are incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on <u>April 22, 2022</u>; and
- the description of our common stock contained in the Registration Statement on Form 8-A relating thereto, filed on September 21, 2020, as updated by the description of our common stock contained in Exhibit 4.1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 3, 2021, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

PMV Pharmaceuticals, Inc. 1 Research Way Princeton, New Jersey 08536 Attn: Investor Relations (609) 642-6670

S-15



Up to \$150,000,000

Common	Stock

PROSPECTUS SUPPLEMENT

Jefferies

, 2023

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth estimated expenses in connection with the issuance and distribution of the securities being registered:

	Amount to be Paid
SEC registration fee	\$35,945(1)
FINRA filing fee	225,500
Stock exchange listing fee	(2)
Printing expenses	(2)
Accounting fees and expenses	(2)
Legal fees and expenses	(2)
Blue Sky, qualification fees and expenses	(2)
Transfer agent and registrar fees and expenses	(2)
Trustee's fees and expenses	(2)
Warrant agent fees and expenses	(2)
Miscellaneous expenses	(2)
Total	(2)

- (1) The registrant previously paid a fee of \$13,905 related to \$150,000,000 of the registrant's common stock pursuant to the Prior ATM Prospectus Supplement. Of such shares of common stock, \$150,000,000 remain unsold, and the registration fee in the amount of \$13,905 is applied to the registrant's total registration fee hereunder.
- (2) The amount of securities and number of offerings are indeterminable and the expenses cannot be estimated at this time. An estimate of the aggregate expenses in connection with the sale and distribution of securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers

Section 145 of the General Corporation Law of the State of Delaware, or DGCL, empowers a corporation to indemnify its directors and officers and to purchase insurance with respect to liability arising out of their capacity or status as directors and officers, provided that the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to our best interests, and, with respect to any criminal action, had no reasonable cause to believe the person's actions were unlawful. The DGCL further provides that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. The amended and restated certificate of incorporation of the registrant provides for the indemnification of the registrant's directors and officers to the fullest extent permitted under the DGCL. In addition, the amended and restated bylaws of the registrant require the registrant expected to fully indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (whether civil, criminal, administrative or investigative) by reason of the fact that such person is or was a director or officer of the registrant, or is or was a director or officer of the registrant serving at the registrant's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, to the fullest extent permitted by applicable law.

Section 102(b)(7) of the DGCL permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for payments of unlawful dividends or unlawful stock repurchases or redemptions or (iv) for any transaction from which the director derived an improper personal benefit. The registrant's amended and restated certificate of incorporation provides that the registrant's directors shall not be personally liable to it or its stockholders for monetary damages for breach of fiduciary duty as a director and that if the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of the registrant's directors shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Section 174 of the DGCL provides, among other things, that a director who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption may be held liable for such actions. A director who was either absent when the unlawful actions were approved, or dissented at the time, may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

As permitted by the DGCL, the registrant has entered, and intends to continue to enter, into separate indemnification agreements with each of the registrant's directors and certain of the registrant's officers that require the registrant, among other things, to indemnify them against certain liabilities that may arise by reason of their status as directors, officers or certain other employees.

The registrant expects to obtain and maintain insurance policies under which its directors and officers are insured, within the limits and subject to the limitations of those policies, against certain expenses in connection with the defense of, and certain liabilities that might be imposed as a result of, actions, suits or proceedings to which they are parties by reason of being or having been directors or officers. The coverage provided by these policies may apply whether or not the registrant would have the power to indemnify such person against such liability under the provisions of the DGCL.

These indemnification provisions and the indemnification agreements entered, and intended to be entered, into between the registrant and the registrant's officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

See also the undertakings set out in response to Item 17 herein.

Item 16. Exhibits

		Incorporation by Reference				
Exhibit <u>Number</u>	Exhibit Description	Form	File No.	Exhibit Number	Filing Date	Filed <u>Herewith</u>
1.1*	Form of Underwriting Agreement					
1.2	Open Market Sale Agreement, dated as of October 4, 2021, between the Registrant and Jefferies LLC	S-3ASR	333-260012	1.2	October 4, 2021	
4.1	Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-39539	3.1	September 29, 2020	

4.2	Amended and Restated Bylaws of the Registrant	8-K	001-39539	3.2	September 29, 2020	
4.3	Amended and Restated Investors' Rights Agreement, dated July 17, 2020, by and among the Registrant and certain of					
	<u>its stockholders</u>	S-1	333-248627	4.1	September 4, 2020	
4.4	Specimen Common Stock Certificate	S-1/A	333-248627	4.2	September 21, 2020	
4.5*	Form of Specimen Preferred Stock Certificate					
4.6	Form of Indenture	S-3ASR	333-260012	4.4	October 4, 2021	
4.7*	Form of Debt Security					
4.8*	Form of Warrant Agreement					
4.9*	Form of Warrant					
4.10*	Form of Subscription Agreement					
4.11*	Form of Purchase Contract Agreement					
4.12*	Form of Unit Agreement					
4.13*	Form of Unit					
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation					X
23.1	Consent of Independent Registered Public Accounting Firm					X
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in the opinion filed as					
	Exhibit 5.1 to this Registration Statement)					X
24.1	Power of Attorney	S-3ASR	333-260012	24.1	October 4, 2021	
24.2	Power of Attorney	POS ASR	333-260012	24.2	March 1, 2023	
25.1**	Form T-1 Statement of Eligibility of Trustee for Indenture under the Trust Indenture Act of 1939					
107	Calculation of Filing Fee Tables	POS ASR	333-260012	107	March 1, 2023	

To be filed, if applicable, by amendment or incorporated by reference pursuant to a Current Report on Form 8-K. To be filed pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939, as amended.

Item 17. Undertakings

- (a) The undersigned registrant hereby undertakes:
 - (1) to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, *however*, that paragraphs (a)(1)(i), (ii) and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (5) that, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided*, *however*, that no statement made in a registration statement or prospectus that is part of the registration statement incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (6) that, for the purpose of determining liability of a registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of such undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (h) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.
- (j) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Post-Effective Amendment No. 2 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Princeton, State of New Jersey, on March 1, 2023.

PMV PHARMACEUTICALS, INC.

By: /s/ David H. Mack, Ph.D. David H. Mack, Ph.D. President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date	
/s/ David H. Mack, Ph.D. David H. Mack, Ph.D.	President and Chief Executive Officer and Director (Principal Executive Officer)	March 1, 2023	
/s/ Winston Kung Winston Kung	Chief Operating Officer and Chief Financial Officer (Principal Financial and Accounting Officer)	March 1, 2023	
* Richard Heyman, Ph.D.	Chair of the Board	March 1, 2023	
* Charles M. Baum M.D., Ph.D.	Director	March 1, 2023	
* Arnold Levine, Ph.D.	Director	March 1, 2023	
* Carol Gallagher, Pharm.D.	Director	March 1, 2023	
* Laurie Stelzer	Director	March 1, 2023	
* Kirsten Flowers	Director	March 1, 2023	
* By: /s/ David H. Mack, Ph.D. David H. Mack, Ph.D., Attorney in fact			



Wilson Sonsini Goodrich & Rosati Professional Corporation 650 Page Mill Road Palo Alto, CA 94304-1050 PHONE: 650.493.9300

FAX: 866.974.7329

March 1, 2023

PMV Pharmaceuticals, Inc. One Research Way Princeton, New Jersey 08540

Re: Post-Effective Amendment No. 2 to Registration Statement on Form S-3

Ladies and Gentlemen:

At your request, we have examined the Post-Effective Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-260012) (as amended, the "Registration Statement"), filed by PMV Pharmaceuticals, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") in connection with the registration pursuant to the Securities Act of 1933, as amended (the "Act"), of the Company Securities (as defined below).

The Registration Statement relates to (i) the proposed issuance and sale by the Company, from time to time, pursuant to Rule 415 under the Act, as set forth in the Registration Statement, the base prospectus contained therein (the "Base Prospectus") and the supplements to the prospectus referred to therein (each a "Prospectus Supplement"), of up to \$200,000,000 of (a) shares of the Company's common stock, \$0.00001 par value per share (the "Common Stock"), (b) shares of the Company's preferred stock, \$0.00001 par value per share (the "Preferred Stock"), (c) the Company's debt securities (the "Debt Securities"), (d) warrants to purchase any of the securities described above (the "Warrants"), (e) subscription rights to purchase Common Stock, Preferred Stock, Debt Securities or Warrants or units consisting of some or all of these securities (the "Subscription Rights"), (f) purchase contracts of the Company with respect to the securities of the Company (the "Purchase Contracts") and (g) units consisting of two or more securities described above in any combination (the "Units" and together with the Common Stock, the Preferred Stock, the Debt Securities, the Warrants, the Subscription Rights and the Purchase Contracts are collectively referred to herein as the "Company Securities") and (ii) the offering by the Company of up to \$150,000,000 of shares (the "Shares") of Common Stock covered by the Registration Statement pursuant to the Base Prospectus and the prospectus supplement dated October 4, 2021 contained within the Registration Statement (the "ATM Prospectus").

The Company Securities are to be sold from time to time as set forth in the Registration Statement, the Base Prospectus contained therein and any applicable Prospectus Supplement. The Debt Securities are to be issued pursuant to a debt securities indenture (the "Indenture"), a form of which has been filed as an exhibit to the Registration Statement and is to be entered into between the Company and a trustee to be named in a Prospectus Supplement to the Registration Statement (the "Trustee"). The Company Securities

AUSTIN BEIJING BOSTON BOULDER BRUSSELS HONG KONG LONDON LOS ANGELES NEW YORK PALO ALTO SALT LAKE CITY SAN DIEGO SAN FRANCISCO SEATTLE SHANGHAI WASHINGTON, DC WILMINGTON, DE

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PMV Pharmaceuticals, Inc. March 1, 2023 Page 2

are to be sold pursuant to a purchase, underwriting or similar agreement in substantially the form to be filed under a Current Report on Form 8-K. The Debt Securities are to be issued in the form set forth in the Indenture. The Indenture may be supplemented in connection with the issuance of each such series of Debt Securities, by a supplemental indenture or other appropriate action of the Company creating such series of Debt Securities. The offering and sale of the Shares are being made pursuant to the common stock sales agreement (the "Sales Agreement"), dated as of October 4, 2021, by and between the Company and Jefferies LLC (the "Sales Agent").

With respect to the Shares, we have examined copies of the Sales Agreement, the Registration Statement, and the ATM Prospectus. We have also examined instruments, documents and records which we deemed relevant and necessary for the basis of our opinion hereinafter expressed. In such examination, we have assumed (a) the authenticity of original documents and the genuineness of all signatures, (b) the conformity to the originals of all documents submitted to us as copies, and (c) the truth, accuracy and completeness of the information, representations and warranties contained in the records, documents, instruments and certificates we have reviewed.

With respect to the filing of the Registration Statement, we have examined instruments, documents, certificates and records that we have deemed relevant and necessary for the basis of our opinions hereinafter expressed. In such examination, we have assumed: (a) the authenticity of original documents and the genuineness of all signatures; (b) the conformity to the originals of all documents submitted to us as copies; (c) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; (d) that the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective under the Act; (e) that a Prospectus Supplement will have been filed with the Commission describing the Company Securities offered thereby; (f) that the Company Securities will be issued and sold in compliance with applicable U.S. federal and state securities laws and in the manner stated in the Registration Statement and the applicable Prospectus Supplement; (g) that a definitive purchase, underwriting or similar agreement with respect to any Company Securities offered will have been duly authorized and validly executed and delivered by the Company and the other parties thereto; (h) that any Company Securities issuable upon conversion, exchange, redemption or exercise of any Company Securities being offered will be duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange, redemption or exercise; (i) with respect to shares of Common Stock or Preferred Stock offered by the Company, that there will be sufficient shares of Common Stock or Preferred Stock authorized under the Company's organizational documents that are not otherwise reserved for issuance; and (j) the legal capacity of all natural persons. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements a

Based on such examination, we are of the opinion that:

1. The Shares have been duly authorized by the Company and, when issued and delivered by the Company against payment therefor in accordance with the terms of the Sales Agreement, will be validly issued, fully paid and nonassessable.

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PMV Pharmaceuticals, Inc. March 1, 2023 Page 3

- 2. With respect to the shares of Common Stock to be sold by the Company, when: (a) the Board of Directors of the Company or a duly constituted and acting committee thereof (such Board of Directors or committee being hereinafter referred to as the "Board") has taken all necessary corporate action to approve the issuance and the terms of the offering of the shares of Common Stock and related matters; and (b) the shares of Common Stock have been duly delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Common Stock, upon payment of the consideration therefor (not less than the par value of the Common Stock) provided for therein or (ii) upon conversion or exercise of any other Company Security, in accordance with the terms of such Company Security or the instrument governing such Company Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board, then the shares of Common Stock will be validly issued, fully paid and nonassessable.
- 3. With respect to any particular series of shares of Preferred Stock, when: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the shares of Preferred Stock, the terms of the offering thereof, and related matters, including the adoption of a certificate of designation (a "Certificate") relating to such Preferred Stock conforming to the General Corporation Law of the State of Delaware (the "DGCL") and the filing of the Certificate with the Secretary of State of the State of Delaware; and (b) the shares of Preferred Stock have been duly delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Preferred Stock, upon payment of the consideration therefor (not less than the par value of the Preferred Stock) provided for therein or (ii) upon conversion or exercise of any other Company Security, in accordance with the terms of such Company Security or the instrument governing such Company Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board, then the shares of Preferred Stock will be validly issued, fully paid and nonassessable.
- 4. With respect to Debt Securities to be issued under the Indenture, when: (a) the Trustee is qualified to act as Trustee under the Indenture and the Company has filed a Form T-1 for the Trustee with the Commission; (b) the Trustee has duly executed and delivered the Indenture; (c) the Indenture has been duly authorized and validly executed and delivered by the Company to the Trustee; (d) the Indenture has been duly qualified under the Trust Indenture Act of 1939, as amended; (e) the Board has taken all necessary corporate action to approve the issuance and terms of such Debt Securities, the terms of the offering thereof and related matters; and (f) such Debt Securities have been duly executed, authenticated, issued and delivered in accordance with the provisions of the Indenture and the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Debt Securities, upon payment of the consideration therefor provided for therein, such Debt Securities will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, and entitled to the benefits of the Indenture.
- 5. With respect to the Warrants, when: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the Warrants and related matters; and (b) the Warrants have been duly executed and delivered against payment therefor, pursuant to the applicable definitive purchase, underwriting, warrant or similar agreement, as applicable, duly authorized, executed and delivered by the

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PMV Pharmaceuticals, Inc. March 1, 2023 Page 4

Company and a warrant agent and the certificates for the Warrants have been duly executed and delivered by the Company and such warrant agent, then the Warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

- 6. With respect to the Subscription Rights, when: (a) the Board has taken all necessary corporate action to authorize the issuance and terms of the Subscription Rights, the terms of the offering thereof, and related matters and (b) the rights agreement under which the Subscription Rights are to be issued has been duly authorized and validly executed and delivered by the Company, and upon payment of the consideration for the Subscription Rights provided for in such rights agreement, if any, then the Subscription Rights will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.
- 7. With respect to the Purchase Contracts, when: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the Purchase Contracts and related matters and (b) the agreement under which the Purchase Contracts are to be issued has been duly authorized and validly executed and delivered by the Company, then the Purchase Contracts will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.
- 8. With respect to the Units, when: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the Units (including any Company Securities underlying the Units) and related matters; and (b) the Units (including any Company Securities underlying the Units) have been duly executed and delivered against payment therefor, pursuant to the applicable definitive purchase, underwriting, or similar agreement duly authorized, executed and delivered by the Company and any applicable unit or other agents, and the certificates for the Units (including any Company Securities underlying the Units) have been duly executed and delivered by the Company and any applicable unit or other agents, then the Units will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

Our opinion that any document is legal, valid and binding is qualified as to:

- (a) limitations imposed by bankruptcy, insolvency, reorganization, arrangement, fraudulent transfer, moratorium or other similar laws relating to or affecting the rights of creditors generally;
 - (b) rights to indemnification and contribution, which may be limited by applicable law or equitable principles; and
- (c) the effect of general principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing, and the possible unavailability of specific performance or injunctive relief, whether considered in a proceeding in equity or at law.

We express no opinion as to the laws of any other jurisdiction, other than the federal laws of the United States of America, the laws of the State of New York as to the enforceability of the Debt Securities, the Warrants, the Subscription Rights, the Purchase Contracts and the Units, and the DGCL.

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PMV Pharmaceuticals, Inc. March 1, 2023 Page 5

We hereby consent to the filing of this opinion as an exhibit to the above-referenced Registration Statement and to the use of our name wherever it appears in the Registration Statement, the Base Prospectus, the ATM Prospectus, any Prospectus Supplement, and in any amendment or supplement thereto. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Wilson Sonsini Goodrich & Rosati, P.C.

WILSON SONSINI GOODRICH & ROSATI Professional Corporation

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in Amendment No. 2 to the Registration Statement (Form S-3) and related Prospectus of PMV Pharmaceuticals, Inc. for the registration of common stock, preferred stock, debt securities, warrants, subscription rights, purchase contracts and units and to the incorporation by reference therein of our report dated March 1, 2023, with respect to the financial statements of PMV Pharmaceuticals, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Philadelphia, Pennsylvania March 1, 2023