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

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**FORM S-3  
REGISTRATION STATEMENT**  
*UNDER  
THE SECURITIES ACT OF 1933*

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**Poseida Therapeutics, Inc.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**47-2846548**  
(I.R.S. Employer  
Identification Number)

**9390 Towne Center Drive, Suite 200  
San Diego, California 92121  
(858) 779-3100**

(Address, including zip code, and telephone number, including area code of registrant's principal executive offices)

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**Kristin Yarema, Ph.D.**  
**Chief Executive Officer**  
**Poseida Therapeutics, Inc.**  
**9390 Towne Center Drive, Suite 200**  
**San Diego, California 92121**  
**(858) 779-3100**

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

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**9390 Towne Centre Drive, Suite 200**  
**San Diego, California 92121**  
**(858) 779-3100**

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**From time to time after the effective date of this Registration Statement**  
(Approximate date of commencement of proposed sale to the public)

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with 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.

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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

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

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The information in this prospectus is not complete and may be changed. The selling stockholder may not sell these securities or accept an offer to buy 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 offers to buy these securities in any state where such offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 8, 2024

PROSPECTUS



**8,333,333 Shares of Common Stock Offered by the Selling Stockholder**

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This prospectus relates to the proposed resale from time to time of up to 8,333,333 shares, or the Shares, of our common stock, par value \$0.0001 per share, or the common stock, by the selling stockholder named herein (together with any of such stockholder's transferees, pledgees, donees or successors).

We are registering the offer and sale of the Shares from time to time by the selling stockholder to satisfy registration rights the selling stockholder was granted in connection with the issuance of the Shares. We will not receive any proceeds from the sale of the Shares by the selling stockholder.

The selling stockholder may offer and sell or otherwise dispose of the Shares described in this prospectus from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. The selling stockholder will bear all underwriting fees, commissions and discounts, if any, attributable to the sales of Shares and all fees and expenses of legal counsel, accountants and other advisors for the selling stockholder, subject to certain specified exceptions. We will bear all other costs, expenses and fees in connection with the registration of the Shares. See the section titled "Plan of Distribution" for more information about how the selling stockholder may sell or dispose of its Shares.

Our common stock is listed on The Nasdaq Global Select Market under the trading symbol "PSTX." On April 2, 2024, the closing price of our common stock was \$2.90 per share.

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**Investing in shares of our common stock involves a high degree of risk. You should review carefully the risks and uncertainties described in the section titled "[Risk Factors](#)" on page 7 of this prospectus and any similar section contained in any amendment or the applicable prospectus supplement and in any free writing prospectuses we have authorized for use in connection with a specific offering, and under similar headings in the documents that are incorporated by reference into this prospectus.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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The date of this prospectus is \_\_\_\_\_, 2024.

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf process, the selling stockholder may from time to time sell the Shares described in this prospectus in one or more offerings or otherwise as described under “Plan of Distribution.”

This prospectus may be supplemented from time to time by one or more prospectus supplements. Such prospectus supplement may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you must rely on the information in the prospectus supplement. You should carefully read both this prospectus and any applicable prospectus supplement together with additional information described under the heading “Where You Can Find Additional Information” before deciding to invest in any shares being offered.

Neither we nor the selling stockholder have authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus or in any related prospectus supplement or any free writing prospectus that we have authorized. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The Shares are not being offered in any jurisdiction where the offer is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus is accurate as of any date other than the respective dates of such document. Our business, financial condition, results of operations and prospects may have changed since those dates.

Unless otherwise stated, all references in this prospectus to “we,” “us,” “our,” “the company,” and “Poseida,” and similar designations, except where the context requires otherwise, refer collectively to Poseida Therapeutics, Inc. This prospectus includes our trademarks, trade names and service marks, such as “piggyBac” and “Cas-CLOVER,” which are protected under applicable intellectual property laws and are our property. This prospectus also contains trademarks, trade names and service marks of other companies, which are the property of their respective owners. Solely for convenience, trademarks, trade names and service marks referred to in this prospectus may appear without the ®, ™ or SM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to such trademarks, trade names and service marks. We do not intend our use or display of other parties’ trademarks, trade names or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties.

## PROSPECTUS SUMMARY

*This summary highlights selected information contained elsewhere in this prospectus and in the documents we incorporate by reference. This summary does not contain all of the information you should consider before investing in our common stock. You should carefully read this entire prospectus and any applicable prospectus supplement, including the risks of investing in our common stock discussed in the section titled “Risk Factors” and under similar headings in our filings with the SEC which are incorporated by reference in this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our consolidated financial statements and related notes and the other information incorporated by reference in this prospectus, before making an investment decision.*

### Company Overview

We are a clinical-stage cell and gene therapy company advancing a new class of treatments for patients with cancer and rare diseases. We have discovered and are developing a broad portfolio of product candidates in a variety of indications based on our core proprietary platforms, including our non-viral piggyBac DNA Delivery System, Cas-CLOVER Site-specific Gene Editing System and nanoparticle- and AAV-based gene delivery technologies. Our core platform technologies have utility, either alone or in combination, across many cell and gene therapeutic modalities and enable us to engineer our portfolio of product candidates that are designed to overcome the primary limitations of current generation cell and gene therapeutics.

Within cell therapy, we believe our technologies allow us to create product candidates with engineered cells, containing a high percentage of stem cell memory T-cells, that may engraft in the patient’s body and potentially drive lasting durable responses. Our chimeric antigen receptor T cell, or CAR-T, therapy portfolio currently consists of allogeneic, or off-the-shelf, product candidates. In the industry, allogeneic CAR-T cell products are earlier in development than the autologous products, due in part to the need for a gene editing technology in their production, but this approach has the potential to be the next significant advance in the field as ready to use, off-the-shelf products of consistently high quality. We have used the learnings of our autologous programs in both hematological and solid tumor indications to help inform our allogeneic programs. We are advancing a broad pipeline and have multiple CAR-T product candidates in the clinical phase in both hematological and solid tumor oncology indications.

Within gene therapy, we believe our technologies have the potential to create a new class of therapies that can deliver long-term, stable gene expression that does not diminish over time and that may have the capacity to result in single treatment cures. We believe our proprietary gene engineering technologies have the potential to address the limitations of the transient nature of traditional gene therapies, thereby offering distinct advantages starting in liver-directed gene therapy. Furthermore, we believe that we have the potential to pursue multiple *in vivo* and *ex vivo* approaches in a wide array of cell types and tissues for non-liver-directed gene therapies.

### Astellas Transactions

#### *Securities Purchase Agreement*

On August 4, 2023, or the Signing Date, we entered into a securities purchase agreement, or the Securities Purchase Agreement, with Astellas US LLC, or Astellas, pursuant to which we agreed to issue and sell to Astellas in a private placement, or the Private Placement, an aggregate of 8,333,333 shares of our common stock, at a purchase price of \$3.00 per Share, for aggregate gross proceeds of approximately \$25.0 million. The Private Placement closed on August 7, 2023, or the Closing Date.

*Registration Rights Agreement*

On the Signing Date, we also entered into a registration rights agreement, or the Registration Rights Agreement, with Astellas, pursuant to which we agreed to register the resale by Astellas of the Shares. Under the Registration Rights Agreement, we agreed to file a registration statement covering the resale of the Shares no later than April 15, 2024. We also agreed to use reasonable best efforts to cause such registration statement to become effective as promptly as practicable after the filing thereof and to keep such registration statement continuously effective until the earlier of (i) the date Astellas no longer beneficially owns any Shares, or (ii) August 7, 2026. We also granted Astellas piggyback registration rights and agreed, among other things, to pay all reasonable fees and expenses (excluding underwriters' discounts and commissions and all fees and expenses of legal counsel, accountants and other advisors for Astellas except as specifically provided in the Registration Rights Agreement) incident to the performance of or compliance with the Registration Rights Agreement by us.

We are also obligated, among other things, to indemnify Astellas from certain liabilities in connection with the registration statement. Astellas also granted us customary indemnification rights in connection with the registration statement.

*Strategic Rights Letter Agreement*

On the Signing Date, we also entered into a strategic rights letter agreement, or the Strategic Rights Letter, with Astellas, pursuant to which we granted Astellas the right to designate a representative, reasonably acceptable to us, to attend meetings and receive related materials provided thereto of our board of directors, or the Board, any committee of the Board, and our scientific advisory board, subject to certain customary exceptions.

During the period beginning on the Closing Date and ending on the 12-month anniversary of the Closing Date, or the Exclusivity Period, we agreed not to (i) solicit, knowingly encourage, negotiate or otherwise enter into *bona fide* discussions about a Program Transaction (as defined below) with any third party, (ii) provide access to any of our confidential information relating to P-MUC1C-ALLO1, our fully allogeneic CAR-T product candidate for multiple solid tumor indications, or the Program, for purposes of knowingly facilitating a Program Transaction, or (iii) enter into any letter of intent, contract or other commitment for a Program Transaction. A "Program Transaction" is an exclusive or co-exclusive license or co-promote or co-marketing arrangement or granting of commercial rights to sell, promote or market one or more products of the Program for any indication in the world.

Further, pursuant to the Strategic Rights Letter, we agreed to provide notice to Astellas (i) if we receive a *bona fide* proposal for a Change in Control (as defined in the Strategic Rights Letter) transaction from a third party, unless such proposal is rejected by the Board, (ii) of the commencement of a process approved by the Board for a Change in Control, (iii) if we receive a *bona fide* proposal for a Program Transaction from a third party unless the proposal is rejected by the Board, or a Program Transaction Proposal, or (iv) following the Exclusivity Period, the commencement of substantive discussions for a Program Transaction with a third party in connection with a process approved by the Board for a Program Transaction, or a Program Process. In connection with a notice related to (x) a Program Transaction Proposal, we granted Astellas a right of first refusal to provide a competing proposal that is in aggregate more favorable to us than the Program Transaction Proposal, and thereby Astellas has a right to negotiate exclusively a possible Program Transaction for a specified period and (y) a Program Process, we granted Astellas a right of first offer to negotiate a Program Transaction for a specified period before we engage with any third party in meaningful substantive discussions, in each case, in accordance with the procedures and subject to the conditions set forth in the Strategic Rights Letter. In connection with the Private Placement and the transactions contemplated by the Strategic Rights Letter, we also entered into a customary standstill agreement with Astellas.

As partial consideration for the rights granted to Astellas under the Strategic Rights Letter, Astellas paid us a one-time payment in the amount of \$25.0 million, or the Upfront Payment. In connection with a Change in Control transaction or Program Transaction between the Company and Astellas, some, all or none of the Upfront Payment may be offset against payments owed by Astellas in a tiered basis to the Company or its controlled affiliates, dependent on certain factors set forth in the Strategic Rights Letter.

The Strategic Rights Letter shall terminate upon the earliest to occur of (i) the 18-month anniversary of the Closing Date, (ii) such time that Astellas owns fewer than 8,000,000 shares of our common stock (subject to adjustment for any stock splits, stock dividends or recapitalizations) and (iii) the consummation of a Change in Control.

### **Risks Associated with Our Business**

Below is a summary of the principal factors that make an investment in our securities speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, and other risks and uncertainties that we face, are set forth in the section titled “Risk Factors” immediately following this prospectus summary and under similar headings in our filings with the SEC which are incorporated by reference in this prospectus.

- We are a clinical-stage cell and gene therapy company with a limited operating history. We have incurred net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We have never generated any revenue from product sales and may never be profitable.
- We will need to obtain substantial additional funding to complete the development and commercialization of our product candidates. If we are unable to raise this capital when needed, we may be forced to delay, reduce or eliminate our product development programs or other operations.
- Our product candidates are in the early stages of development and we have a limited history of conducting clinical trials to test our product candidates in humans.
- Our product candidates are based on novel technologies, which make it difficult to predict the timing, results and cost of product candidate development and likelihood of obtaining regulatory approval.
- Our business is highly dependent on the success of our lead product candidates. If we are unable to advance clinical development, obtain approval of and successfully commercialize our lead product candidates for the treatment of patients in approved indications, our business would be significantly harmed.
- Serious adverse events, undesirable side effects or other unexpected properties of our product candidates may be identified during development or after approval, which could lead to the discontinuation of our clinical development programs, refusal by regulatory authorities to approve our product candidates or, if discovered following marketing approval, revocation of marketing authorizations or limitations on the use of our product candidates thereby limiting the commercial potential of such product candidate.
- We rely on third parties to conduct our clinical trials and perform some of our research and preclinical studies. If these third parties do not satisfactorily carry out their contractual duties or fail to meet expected deadlines, our development programs may be delayed or subject to increased costs, each of which may have an adverse effect on our business and prospects.
- We operate a clinical manufacturing facility to develop and manufacture preclinical and clinical materials for all of our CAR-T product candidates which requires significant resources. A failure to successfully operate our clinical manufacturing facility could lead to substantial delays and adversely

affect our research and development efforts, including clinical trials, and the future commercial viability, if approved, of our CAR-T product candidates.

- We are currently party to several in-license agreements under which we acquired rights to use, develop, manufacture and/or commercialize certain of our platform technologies and resulting product candidates. If we breach our obligations under these agreements, we may be required to pay damages, lose our rights to these technologies or both, which would adversely affect our business and prospects.
- Our collaborator may not devote sufficient resources to the development or commercialization of our product candidates or may otherwise fail in development or commercialization efforts, which could adversely affect our ability to develop or commercialize certain of our product candidates and our financial condition and operating results.
- We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.
- We face substantial competition, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us.
- If we are unable to obtain and maintain sufficient intellectual property protection for our platform technologies and product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be adversely affected.
- If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.

### **Company Information**

We were incorporated in Delaware in December 2014. Our principal executive offices are located at 9390 Towne Centre Drive, Suite 200, San Diego, California 92121 and our telephone number is (858) 779-3100. Our corporate website address is [www.poseida.com](http://www.poseida.com). The information on, or accessible through, our website is not incorporated by reference into this prospectus, and you should not rely on any such information in making the decision whether to purchase our common stock. We have included our website in this prospectus solely as an inactive textual reference.

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

We are an emerging growth company, as defined in Section 2(a) of the Securities Act of 1933, as amended, or the Securities Act, as modified by the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. The JOBS Act permits an “emerging growth company” to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to use this the extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates. The JOBS Act also allows us to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including relief from the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, less extensive disclosure obligations regarding executive compensation in our registration statements, periodic reports and proxy statements, exemptions from the requirements to hold a nonbinding advisory vote on executive compensation, and exemptions from stockholder approval of any golden parachute payments not previously approved. We may also elect to take



advantage of other reduced reporting requirements in future filings. As a result, our stockholders may not have access to certain information that they may deem important and the information that we provide to our stockholders may be different than, and not comparable to, information presented by other public reporting companies.

We will remain an emerging growth company until the earliest to occur of: (1) the last day of the fiscal year in which we have more than \$1.235 billion in annual revenue; (2) the date we qualify as a “large accelerated filer,” with at least \$700.0 million of equity securities held by non-affiliates; (3) the date on which we have issued more than \$1.0 billion in non-convertible debt securities during the prior three-year period; and (4) December 31, 2025.

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

**THE OFFERING**

<b>Common Stock Offered by the Selling Stockholder</b>	8,333,333 Shares.
<b>Use of Proceeds</b>	We will not receive any of the proceeds from the sale of the Shares in this offering. The selling stockholder will receive all of the proceeds from the sale of the Shares hereunder.
<b>Risk Factors</b>	An investment in our common stock involves a high degree of risk. See the information contained in or incorporated by reference in the section titled “Risk Factors” and under similar headings in the other documents that are incorporated by reference herein, as well as the other information included in or incorporated by reference in this prospectus.
<b>Nasdaq Global Select Market Symbol</b>	Our common stock is listed on The Nasdaq Global Select Market under the symbol “PSTX.”

## **RISK FACTORS**

Investing in our common stock involves a high degree of risk. Prior to making a decision about investing in our common stock, you should consider carefully the specific risk factors discussed in the sections titled “Risk Factors” contained in our most recent Annual Report on Form 10-K, as updated by our subsequent quarterly and other reports and other documents which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference, any prospectus supplement and any free writing prospectus that we may authorize. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us, or that we currently view as immaterial, may also impair our business. Each of the risk factors described in the documents referenced above could adversely affect our business, operating results, and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment. Please also read carefully the section below entitled “Special Note Regarding Forward-Looking Statements.”

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any accompanying prospectus supplement, and the information incorporated by reference in this prospectus and each prospectus supplement contain 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, that involve a number of risks and uncertainties. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, these forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements.

In some cases, you can identify forward-looking statements by the words “may,” “might,” “can,” “will,” “to be,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “likely,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements include but are not limited to statements under the headings “Business,” “Risk Factors,” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and in other sections incorporated by reference from our Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q, as applicable, as well as our other filings with the SEC. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements.

You should refer to the “Risk Factors” section above and contained in any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

The cautionary statements made in this prospectus are intended to be applicable to all related forward-looking statements wherever they may appear in this prospectus or in any prospectus supplement or any documents incorporated by reference herein or therein. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date they are made. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

## **USE OF PROCEEDS**

All of the Shares offered to be sold pursuant to this prospectus will be sold by the selling stockholder. We will not receive any of the proceeds from the sale of the Shares in this offering. The selling stockholder will receive all of the proceeds from the sale of the Shares hereunder.

We will bear the expenses and fees incurred in connection with the registration of the Shares. The selling stockholder will bear underwriting, broker or similar fees or commissions and all fees and expenses of legal counsel, accountants and other advisors of the selling stockholder with respect to sales of the Shares.

## SELLING STOCKHOLDER

We have prepared this prospectus to allow the selling stockholder to offer and sell from time to time up to 8,333,333 shares of our common stock for their own account. We are registering the offer and sale of the Shares to satisfy certain registration obligations that we granted the selling stockholder in the Registration Rights Agreement.

The following table sets forth (i) the name of the selling stockholder, (ii) the number of shares of common stock beneficially owned by such selling stockholder, (iii) the number of shares of common stock that may be offered under this prospectus and (iv) the number of shares of common stock beneficially owned by such selling stockholder assuming all of the shares covered hereby are sold.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the selling stockholder named in the table below has sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws.

The selling stockholder may sell some, all or none of the Shares offered by this prospectus from time to time. We do not know how long the selling stockholder will hold the Shares covered hereby before selling them and we currently have no agreements, arrangements or understandings with the selling stockholder regarding the sale or other disposition of any Shares. The information set forth in the table below is based on 96,489,127 shares of our common stock outstanding as of March 4, 2024 and assumes the selling stockholder disposes of all of the Shares covered by this prospectus and does not acquire beneficial ownership of any additional shares of common stock. The registration of the Shares does not necessarily mean that the selling stockholder will sell all or any portion of the Shares covered by this prospectus.

As used in this prospectus, the term “selling stockholder” includes the selling stockholder listed in the table below, together with any additional selling stockholders listed in a prospectus supplement, and their donees, pledgees, assignees, transferees, distributees and successors-in-interest that receive Shares in any non-sale transfer after the date of this prospectus.

Name of Selling Stockholder	Beneficial Ownership Prior to this Offering		Number of Shares Being Offered <sup>(2)</sup>	Beneficial Ownership After this Offering <sup>(1)</sup>	
	Number of Shares <sup>(3)</sup>	Percentage of Outstanding Common Stock		Number of Shares	Percent of Outstanding Common Stock
Astellas US LLC	8,333,333	8.6%	8,333,333	—	— %

- (1) Assumes the selling stockholder sells the maximum number of shares of our common stock possible in this offering.
- (2) Represents all of the shares of our common stock that the selling stockholder may offer and sell from time to time under this prospectus.
- (3) The shares reported under “Beneficial Ownership Prior to this Offering” consists of 8,333,333 shares of our common stock purchased by Astellas US LLC in the Private Placement. Astellas US LLC is a wholly owned direct subsidiary of Astellas US Holding, Inc., which is in turn a wholly owned direct subsidiary of Astellas Pharma Inc. Astellas Pharma Inc., Astellas US Holding, Inc. and Astellas US LLC may each be deemed to have shared voting and dispositive power over all of the Shares. The address of the principal business office of (i) Astellas US LLC and Astellas US Holding, Inc. is 2375 Waterview Drive, Northbrook, IL 60062, and (ii) Astellas Pharma Inc. is 2-5-1, Nihonbashi-Honcho, Chuo-Ku, Tokyo 103-8411, Japan.

**Relationships with Selling Stockholder**

As discussed in greater detail under the section titled “Prospectus Summary—Astellas Transactions,” in August 2023, we entered into the Astellas Transactions, pursuant to which we sold and issued 8,333,333 shares of our common stock to Astellas. We also entered into the Registration Rights Agreement with Astellas, pursuant to which we agreed to file a registration statement with the SEC to cover the resale by Astellas of the Shares. Pursuant to the Strategic Rights Letter, in connection with the Private Placement, Astellas has the right to designate a representative, reasonably acceptable to us, to attend all meetings of the Board, any committee of the Board, and our scientific advisory board, subject to certain customary exceptions.

## PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock previously issued or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. The selling stockholders may sell their shares of our common stock pursuant to this prospectus at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date of the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).



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The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until such time as the shares offered by the selling stockholders have been effectively registered under the Securities Act and disposed of in accordance with such registration statement, the shares offered by the selling stockholders have been disposed of pursuant to Rule 144 under the Securities Act or the shares offered by the selling stockholders may be resold pursuant to Rule 144 without restriction or limitation (including without the requirement to be in compliance with Rule 144(c)(1)) or another similar exemption under the Securities Act.

## LEGAL MATTERS

Certain legal matters, including the validity of the common stock offered by this prospectus, and any prospectus supplement thereto, will be passed upon by Cooley LLP.

## EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2023, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

The financial statements as of December 31, 2022 and for the year ended December 31, 2022 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2023 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement on Form S-3 we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You should rely only on the information contained in this prospectus or incorporated by reference in this prospectus. We have not authorized anyone else to provide you with different information. We are not making an offer of our common stock in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock offered by this prospectus.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers, such as us, that file electronically with the SEC.

Copies of certain information filed by us with the SEC are also available on our website at [www.poseida.com](http://www.poseida.com). Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference in this prospectus. We have included our website address as an inactive textual reference only.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2023, filed with the SEC on March 7, 2024, including the information that will be incorporated by reference therein upon the filing of our Definitive Proxy Statement on Schedule 14A to be filed with the SEC;

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- our Current Reports on Form 8-K (other than information furnished rather than filed), filed with the SEC on [January 4, 2024](#), [March 7, 2024](#) and [April 8, 2024](#); and
- the description of our common stock contained in our Registration Statement on [Form 8-A](#), filed with the SEC on July 7, 2020, including any amendments or reports filed for the purposes of updating such description.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of the registration statement, or (ii) after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at Poseida Therapeutics, Inc., 9390 Towne Centre Drive, Suite 200, San Diego, California 92121 or telephoning us at (858) 779-3100.

Any statement contained in this prospectus or contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded to the extent that a statement contained in this prospectus or any subsequently filed supplement to this prospectus, or document deemed to be incorporated by reference into this prospectus, modifies or supersedes such statement.



**8,333,333 Shares of Common Stock**

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**PROSPECTUS**

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, 2024

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**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution.**

The following table sets forth the various expenses to be incurred in connection with the sale and distribution of the securities being registered hereby, all of which will be borne by the Registrant (except any underwriting discounts and commissions and expenses incurred by the selling stockholder for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholder in disposing of its shares). All amounts shown are estimates except the Securities and Exchange Commission, or the SEC, registration fee.

	<u>Amount</u>
SEC registration fees	\$ 3,640.80
Accounting fees and expenses	90,000.00
Legal fees and expenses	140,000.00
Miscellaneous fees and expenses	10,000.00
Total	<u>\$ 243,640.80</u>

**Item 15. Indemnification of Directors and Officers.**

The Registrant is incorporated under the laws of the State of Delaware. Section 145 of the General Corporation Law of the State of Delaware, or the General Corporation Law, authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act. The Registrant's amended and restated certificate of incorporation permits indemnification of its directors, officers, employees and other agents to the maximum extent permitted by the General Corporation Law, and the Registrant's amended and restated bylaws provide that the Registrant will indemnify its directors and officers and permit the Registrant to indemnify its employees and other agents, in each case, to the maximum extent permitted by law.

As permitted by the General Corporation Law, the Registrant has entered into indemnification agreements with each of its directors and officers, pursuant to which the Registrant has agreed to indemnify such persons against any and all costs and expenses (including attorneys', witness or other professional fees) actually and reasonably incurred by such persons in connection with any action, suit or proceeding (including derivative actions), whether actual or threatened, to which any such person may be made a party by reason of the fact that such person is or was a director or officer or is or was acting or serving as a director, officer, employee or agent of the Registrant or any of its affiliated enterprises, provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the Registrant's best interest.

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

The Registrant maintains an insurance policy that covers its directors and officers with respect to certain liabilities, including liabilities arising under the Securities Act of 1933, as amended, or the Securities Act, and the Securities Exchange Act of 1934, as amended, or the Exchange Act, that might be incurred by any director or officer in his or her capacity as such.

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### **Item 16. Exhibits.**

<b>Exhibit Number</b>	<b>Description of Document</b>
4.1	<a href="#"><u>Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-39376), filed with the SEC on July 14, 2020).</u></a>
4.2	<a href="#"><u>Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-39376), filed with the SEC on July 14, 2020).</u></a>
4.3	<a href="#"><u>Form of Common Stock Certificate of Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-239321), filed with the SEC on June 19, 2020).</u></a>
4.4	<a href="#"><u>Registration Rights Agreement, by and between the Registrant and Astellas US LLC, dated August 4, 2023 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K (File No. 001-39376), filed with the SEC on August 7, 2023).</u></a>
10.1	<a href="#"><u>Securities Purchase Agreement, by and between the Registrant and Astellas US LLC, dated August 4, 2023 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-39376), filed with the SEC on August 7, 2023).</u></a>
10.2#	<a href="#"><u>Strategic Rights Letter Agreement, by and between the Registrant and Astellas US LLC, dated August 4, 2023 (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K (File No. 001-39376), filed with the SEC on August 7, 2023).</u></a>
5.1*	<a href="#"><u>Opinion of Cooley LLP</u></a>
23.1*	<a href="#"><u>Consent of Cooley LLP (included in Exhibit 5.1)</u></a>
23.2*	<a href="#"><u>Consent of Ernst &amp; Young LLP, independent registered public accounting firm</u></a>
23.3*	<a href="#"><u>Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm</u></a>
24.1*	<a href="#"><u>Power of Attorney (included on the signature page of this registration statement)</u></a>
107*	<a href="#"><u>Filing Fee Table</u></a>

\* Filed herewith.

# Pursuant to Item 601(b)(10) of Regulation S-K, certain portions of this exhibit have been omitted by means of marking such portions with asterisks because the information is both not material and is the type that the Registrant treats as private or confidential.

### **Item 17. Undertakings.**

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

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the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 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 (1)(i), (1)(ii) and (1)(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 SEC by the Registrant pursuant to Section 13 or 15(d) of 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.
- (4) 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 or made in a document 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.
- (5) That, for the purpose of determining any liability of the Registrant under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 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.
- (6) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public

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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.



## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on April 8, 2024.

### POSEIDA THERAPEUTICS, INC.

By: /s/ Kristin Yarema  
Kristin Yarema, Ph.D.  
President and Chief Executive Officer

## POWER OF ATTORNEY

**KNOW ALL PERSONS BY THESE PRESENTS**, that each of the persons whose names appear below constitutes and appoints Kristin Yarema, Ph.D. and Johanna M. Mylet, C.P.A., and each of them, as such person's true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for such person and in his or her name, place and stead, in any and all capacities, to execute any and all amendments (including post-effective amendments) to this Registration Statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the U.S. Securities Act of 1933, as amended), and to file the same, together with all exhibits thereto, and other documents in connection therewith, with the U.S. Securities and Exchange Commission, and such other agencies, offices and persons as may be required by applicable law, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that each said attorney-in-fact and agent may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Kristin Yarema</u> Kristin Yarema, Ph.D.	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	April 8, 2024
<u>/s/ Johanna M. Mylet</u> Johanna M. Mylet, C.P.A.	Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i>	April 8, 2024
<u>/s/ Mark J. Gergen</u> Mark J. Gergen, J.D.	Executive Chairman and Director	April 8, 2024
<u>/s/ Rafael G. Amado</u> Rafael G. Amado, M.D.	Director	April 8, 2024
<u>/s/ Charles M. Baum</u> Charles M. Baum, M.D., Ph.D.	Director	April 8, 2024
<u>/s/ Cynthia Collins</u> Cynthia Collins, M.B.A.	Director	April 8, 2024

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Signature	Title	Date
<u>/s/ Luke Corning</u> Luke Corning	Director	April 8, 2024
<u>/s/ Marcea B. Lloyd</u> Marcea B. Lloyd, J.D.	Director	April 8, 2024
<u>/s/ John P. Schmid</u> John P. Schmid, M.B.A.	Director	April 8, 2024



Thomas A. Coll  
+1 858 550 6013  
collta@cooley.com

April 8, 2024

Poseida Therapeutics, Inc.  
9390 Towne Centre Drive, Suite 200  
San Diego, California 92121

Ladies and Gentlemen:

We have acted as counsel to Poseida Therapeutics, Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a Registration Statement on Form S-3 (the "**Registration Statement**") with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), covering the resale by the selling stockholder named in the Registration Statement (the "**Selling Stockholder**") of 8,333,333 shares (the "**Shares**") of the Company's Common Stock, par value \$0.0001 per share ("**Common Stock**"). The Shares were issued pursuant to a securities purchase agreement, dated August 4, 2023, by and between the Company and the Selling Stockholder (the "**Purchase Agreement**").

In connection with this opinion, we have examined and relied upon the Registration Statement and related prospectus, the Company's certificate of incorporation and bylaws, each as currently in effect, the Purchase Agreement and such other documents, records, opinions, certificates, memoranda and instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials and the due authorization, execution and delivery of all documents by all persons other than the Company where authorization, execution and delivery are prerequisites to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares are validly issued, fully paid and nonassessable.

Our opinion is limited to the matters expressly set forth in this letter, and no opinion should be implied, or may be inferred, beyond the matters expressly stated. This opinion speaks only as to law and facts in effect or existing as of the date hereof, and we have no obligation or responsibility to update or supplement this letter to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.



Poseida Therapeutics, Inc.  
April 8, 2024  
Page Two

We hereby consent to the reference to our firm under the caption "Legal Matters" in the prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to the Registration Statement. 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 Securities Act or the rules and regulations of the Commission thereunder.

\*\*\*\*\*

Sincerely,

Cooley LLP

By: /s/ Thomas A. Coll

Thomas A. Coll

10265 SCIENCE CENTER DRIVE, SAN DIEGO, CA 92121 T: (858) 550-6000 F: (858) 550-6420 WWW.COOLEY.COM

**Consent of Independent Registered Public Accounting Firm**

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form S-3) and related Prospectus of Poseida Therapeutics, Inc. for the registration of 8,333,333 shares of its common stock and to the incorporation by reference therein of our report dated March 7, 2024, with respect to the consolidated financial statements of Poseida Therapeutics, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2023, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California

April 8, 2024

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of Poseida Therapeutics, Inc. of our report dated March 9, 2023 relating to the financial statements, which appears in Poseida Therapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2023. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP  
Irvine, California  
April 8, 2024

## Calculation of Filing Fee Tables

Form S-3  
(Form Type)Poseida Therapeutics, Inc.  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered <sup>(1)</sup>	Proposed Maximum Offering Price Per Share <sup>(2)</sup>	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.0001 per share	Other	8,333,333	\$2.96	\$24,666,665.68	0.00014760	\$3,640.80
<b>Total Offering Amounts</b>							\$3,640.80
<b>Total Fee Previously Paid</b>							—
<b>Total Fee Offsets</b>							—
<b>Net Fee Due</b>							\$3,640.80

- (1) The shares of Common Stock, par value \$0.0001 per share (“Common Stock”), of the Registrant will be offered for resale by the selling stockholder. Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement also covers any additional number of shares of Common Stock issuable upon stock splits, stock dividends, or other distribution, recapitalization or similar events with respect to the shares of Common Stock being registered pursuant to this registration statement.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) of the Securities Act. The proposed maximum offering price per share and maximum aggregate offering price are calculated using the average of the high (\$3.04) and low (\$2.87) prices of the Common Stock as reported on the Nasdaq Global Select Market on April 2, 2024, which date is within five business days prior to the filing of this registration statement.