

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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

TFF Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
Incorporation or organization)

2834

(Primary Standard Industrial
Classification Code Number)

82-4344737

(IRS Employer
Identification Number)

**1751 River Run, Suite 400
Fort Worth, Texas 76107
(817) 438-6168**

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

**Harlan Weisman, M.D.
Chief Executive Officer
TFF Pharmaceuticals, Inc.
1751 River Run, Suite 400
Fort Worth, Texas 76107
(817) 438-6168**

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

Copy to:

**Daniel K. Donahue, Esq.
Greenberg Traurig, LLP
18565 Jamboree Road, Suite 500
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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

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, check the following box.

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

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

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

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

Large accelerated filer
Non-accelerated filer

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 to Section 7(a)(2)(B) of the Securities Act.

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 of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

THE INFORMATION IN THIS PRELIMINARY PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THESE SECURITIES MAY NOT BE SOLD UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS DECLARED EFFECTIVE. THIS PRELIMINARY PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND WE ARE NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

PRELIMINARY PROSPECTUS

SUBJECT TO COMPLETION, DATED APRIL 8, 2024



TFF Pharmaceuticals, Inc.

Up to _____ Shares of Common Stock Underlying the Series B Warrants, Pre-Funded Warrants and Placement Agent Warrants

Up to _____ Shares of Common Stock

Up to _____ Series B Warrants to Purchase Shares of Common Stock

Up to _____ Pre-Funded Warrants to Purchase Shares of Common Stock

Up to _____ Placement Agent Warrants to Purchase Shares of Common Stock

We are offering up to _____ shares of our common stock, together with Series B common stock purchase warrants to purchase up to _____ shares of common stock, or the Series B warrants. Each share of our common stock, or a pre-funded warrant in lieu thereof, is being sold together with a Series B warrant to purchase one share of our common stock. The shares of common stock and Series B warrants are immediately separable and will be issued separately in this offering but must be purchased together in this offering. The assumed public offering price for each share of common stock and accompanying Series B warrant is \$ _____. Each Series B warrant will have an exercise price per share of \$ _____, will be exercisable upon issuance and have a term of five years from the date of issuance.

We are also offering to each purchaser whose purchase of shares of our common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the holder, 9.99%) of our outstanding shares of common stock immediately following consummation of this offering, the opportunity to purchase, if the purchaser so chooses, pre-funded warrants to purchase shares of common stock, or the pre-funded warrants, in lieu of shares of common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant will equal the price per share of common stock being sold to the public in this offering, minus \$0.0001, and the exercise price of each pre-funded warrant will be \$0.0001 per share. For each pre-funded warrant that we sell, the number of shares of our common stock that we are offering will be decreased on a one-for-one basis. The Series B warrants and the pre-funded warrants will not be listed on the Nasdaq Capital Market and are not expected to trade in any market; however, we anticipate that the shares of our common stock to be issued upon exercise of the Series B warrants and pre-funded warrants will trade on the Nasdaq Capital Market. We are also registering the shares of common stock issuable upon exercise of the Series B warrants, pre-funded warrants and placement agent warrants pursuant to this prospectus.

Our common stock is listed on the Nasdaq Capital Market under the symbol "TFFP." The last reported sale price of our common stock on the Nasdaq Capital Market on April 4, 2024, was \$4.83 per share. The final public offering price per share of common stock and accompanying Series B warrant, and per pre-funded warrant and accompanying Series B warrant, will be determined between us and investors based on market conditions at the time of pricing. The recent market price used throughout this prospectus may not be indicative of the actual public offering price. The actual public offering price may be based upon a number of factors, including our history and our prospects, the industry in which we operate, our past and present operating results, the previous experience of our executive officers and the general condition of the securities markets at the time of this offering. There is no established public trading market for the Series B warrants or pre-funded warrants and we do not expect a market for the Series B warrants or the pre-funded warrants to develop. We do not intend to list the Series B warrants or pre-funded warrants on the Nasdaq Capital Market, any other national securities exchange or any other trading system. Without an active trading market, the liquidity of the Series B warrants and the pre-funded warrants will be limited.

We have engaged _____, or the placement agent, to act as our exclusive placement agent in connection with this offering. The placement agent has agreed to use its reasonable best efforts to arrange for the sale of the securities offered by this prospectus. The placement agent is not purchasing or selling any of the securities we are offering and the placement agent is not required to arrange the purchase or sale of any specific number or dollar amount of securities. We have agreed to pay to the placement agent the placement agent fees set forth in the table below, which assumes that we sell all of the securities offered by this prospectus. There is no arrangement for funds to be received in escrow, trust or similar arrangement. There is no minimum offering requirement as a condition of closing of this offering. Because there is no minimum offering amount required as a condition to closing this offering, we may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to pursue our business goals described in this prospectus. We will bear all costs associated with the offering. See "Plan of Distribution" on page 22 of this prospectus for more information regarding these arrangements.

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

Investing in our securities involves a high degree of risk. Before making an investment decision, you should carefully review and consider all of the information set forth in this prospectus and the documents incorporated by reference herein and therein, including the risks and uncertainties described under "Risk Factors" beginning on page 7 of this prospectus and the risk factors incorporated by reference into this prospectus.

Neither the U.S. 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.

	Per Share and Series B Warrant	Per Pre-Funded Warrant and Series B Warrant	Total
Public offering price	\$ _____	\$ _____	\$ _____
Placement Agent Fees ⁽¹⁾	\$ _____	\$ _____	\$ _____
Proceeds to us, before expenses ⁽²⁾	\$ _____	\$ _____	\$ _____

- (1) We have agreed to pay the placement agent a cash fee equal to 7.0% of the gross proceeds raised in this offering. We have also agreed to reimburse the placement agent for certain of its offering-related expenses, including a management fee equal to 1.0% of the aggregate gross proceeds raised in this offering, reimbursement for non-accountable expenses in an amount of \$25,000, legal fees and other out-of-pocket expenses in the amount of up to \$100,000, and for its clearing expenses in the amount of up to \$15,950. In addition, we have agreed to issue to the placement agent or its designees warrants to purchase a number of shares of common stock equal to 7.0% of the shares of common stock sold in this offering (including the shares of common stock issuable upon exercise of the pre-funded warrants), at an exercise price of \$ _____ per share, which represents 125% of the assumed public offering price per share. For more information about the compensation to be received by the placement agent, see “Plan of Distribution”.
- (2) Because there is no minimum number of securities or amount of proceeds required as a condition to closing in this offering, the actual public offering amount, placement agent fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. For more information, see “Plan of Distribution.”

The delivery to purchasers of the shares of common stock, pre-funded warrants and Series B warrants in this offering is expected to be made on or about _____, 2024, subject to satisfaction of certain customary closing conditions.

The date of this prospectus is April _____, 2024.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	ii
PROSPECTUS SUMMARY	1
THE OFFERING	4
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	6
RISK FACTORS	7
USE OF PROCEEDS	13
DIVIDEND POLICY	13
DILUTION	14
DESCRIPTION OF CAPITAL STOCK	16
DESCRIPTION OF SECURITIES WE ARE OFFERING	19
PLAN OF DISTRIBUTION	22
LEGAL MATTERS	25
EXPERTS	25
INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE	25
WHERE YOU CAN FIND MORE INFORMATION	26

ABOUT THIS PROSPECTUS

You should rely only on the information contained in this prospectus or in any free writing prospectus that we may specifically authorize to be delivered or made available to you. We have not authorized anyone to provide you with any information other than that contained in this prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus may only be used where it is legal to offer and sell our securities. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date. We are not making an offer of these securities in any jurisdiction where the offer is not permitted.

For investors outside the United States: We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside must inform themselves about, and observe any restrictions relating to, the offering of securities and the distribution of this prospectus outside the United States.

This prospectus includes or incorporates by reference statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We believe that the data obtained from these industry publications and third-party research, surveys and studies are reliable.

This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed or have been incorporated by reference as exhibits to the registration statement of which this prospectus forms a part, and you may obtain copies of those documents as described in this prospectus under the heading “Where You Can Find More Information.”

Unless otherwise indicated, the terms “TFF Pharmaceuticals,” “Company,” “we,” “us,” and “our” refer to TFF Pharmaceuticals, Inc. and its wholly-owned subsidiaries.

PROSPECTUS SUMMARY

This summary highlights some of the information contained elsewhere in this prospectus. This summary is not complete and does not contain all the information that you should consider before investing in our securities. You should carefully consider the risks and uncertainties described below, together with all of the other information in this prospectus, including our financial statements and related notes, before investing in our securities. If any of the following risks materialize, our business, financial condition, operating results and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all of your investment.

On December 19, 2023, we effected a 1-for-25 reverse split of our common stock. All historical share amounts and share price information

presented in this prospectus have been proportionally adjusted to reflect the impact of this stock split.

Our Company

We are a clinical stage biopharmaceutical company focused on developing and commercializing innovative drug products based on our patented Thin Film Freezing, or TFF, technology platform. Based on our internal and sponsored testing and studies, we believe that our TFF platform can significantly improve the solubility of poorly water-soluble drugs, which make up approximately 40% of marketed pharmaceuticals worldwide, thereby improving the bioavailability and pharmacokinetics of those drugs. We believe that in the case of some new drugs that cannot be developed due to poor water solubility, our TFF platform has the potential to increase the pharmacokinetic effect of the drug to a level allowing for its development and commercialization. When administered as an inhaled dry powder for treatment of lung disorders, we believe the TFF platform formulations can be used to increase efficacy and minimize systemic toxicities and drug-drug interactions.

As of the date of this prospectus, we have two product candidates in clinical trials, TFF Voriconazole Inhalation Powder, or TFF VORI, and TFF Tacrolimus Inhalation Powder, or TFF TAC. To date, we have completed one Phase 1 study in healthy volunteers and one Phase 1b study in patients with asthma exploring the safety, tolerability and pharmacokinetics of TFF VORI. We have initiated Phase 2 clinical trials of TFF VORI and TFF TAC and, in December 2023, we released positive initial data from both trials, along with clinical data from our ongoing TFF VORI Expanded Access Program. In March 2024, we announced our decision to prioritize clinical development of TFF TAC based on positive Phase 2 data and to evaluate strategic options for TFF VORI. We expect to conclude our Phase 2 clinical trials of TFF VORI in the first half of 2024 and TFF TAC in the second half of 2024.

We are also actively engaged in the analysis and testing of dry powder formulations of several drugs and vaccines through parenteral, topical, ocular, pulmonary and nasal applications through feasibility studies and material transfer agreements with U.S. and international pharmaceutical companies and certain government agencies. We intend to initially focus on the development of inhaled dry powder drugs for the treatment of pulmonary diseases and conditions. While the TFF platform was designed to improve solubility of poorly water-soluble drugs generally, the researchers at University of Texas at Austin, or UT, found that the technology was particularly useful in generating dry powder particles with properties which allow for superior inhalation delivery to the deep lung, which is an area of extreme interest in respiratory medicine. We believe that our TFF platform can significantly increase the number of pulmonary drug products that can be delivered directly to the lung. We intend to design our dry powder drug products for use with dry powder inhalers, which are generally considered to be the most effective and patient-friendly of all breath-actuated inhalers. We plan to focus on developing inhaled dry powder formulations of existing off-patent drugs suited for lung diseases and conditions, which we believe includes dozens of potential drug candidates, many of which have a potential market of over \$1 billion.

On March 22, 2024, we completed a registered direct offering, selling 147,500 shares of our common stock and warrants to purchase up to 147,500 shares of our common stock at an offering price of \$8.00 per share. The warrants are immediately exercisable upon issuance at an exercise price of \$8.00 per share and will expire five and one-half years following the date of issuance. We received gross proceeds of approximately \$1.2 million before deducting placement agent fees and other offering expenses.

Corporate Information

We were incorporated under the laws of the state of Delaware on January 24, 2018. Our principal executive offices are located at 1751 River Run, Suite 400, Fort Worth, Texas 76107, and our telephone number is (817) 438-6168. Our website address is www.tffpharma.com. The information contained in, or accessible through, our website is not incorporated by reference into this prospectus, and you should not consider any information contained in, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

We own unregistered trademarks, including our company name. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the symbols ® and ™, but such references should not be construed as any indication that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

Additional Information

For additional information related to our business and operations, please refer to the reports incorporated herein by reference, including our Annual Report on Form 10-K for the year ended December 31, 2023 as filed with the SEC on March 28, 2024, or the 2023 Form 10-K, as described in the section entitled "*Incorporation of Certain Documents by Reference*" in this prospectus.

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

Emerging Growth Company Status

We qualify as an "emerging growth company", as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the completion of our initial public offering, (ii) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.235 billion, (iii) the last day of the fiscal year on which we are deemed to be a "large accelerated filer" under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which means the market value of the shares of our common stock that are held by non-affiliates exceeds \$700 million as of the end of the second quarter of that fiscal year), or (iv) the date on which we have issued more than \$1 billion in non-convertible debt securities during the prior three-year period.

An emerging growth company may take advantage of reduced reporting and other requirements that are otherwise applicable generally to reporting companies that make filings with the SEC. For so long as we remain an emerging growth company, we will not be required to, among other things:

- present more than two years of audited financial statements and two years of related selected financial information and management's discussion and analysis of financial condition and results of operations disclosure in our registration statement of which this prospectus forms a part;
- have an auditor report on our internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended (the "Sarbanes-Oxley Act");
- comply with any requirement that may be adopted by the PCAOB regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (i.e., an auditor discussion and analysis);

- submit certain executive compensation matters, such as “say-on-pay”, “say-on-frequency” and “say-on-golden parachutes”, to our stockholders for non-binding advisory votes; and
- disclose certain executive compensation related items, such as the correlation between executive compensation and performance, and a comparison of our Chief Executive Officer’s compensation to the median compensation of our employees.

We have elected to adopt the reduced disclosure requirements available to emerging growth companies. As a result of these elections, the information that we provide in this prospectus may be different from the information you may receive from other public companies in which you hold securities. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and the market price of our common stock may be more volatile.

The JOBS act also permits emerging growth companies to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to “opt-in” to this extended transition period for complying with new or revised accounting standards, and intend to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. Therefore, we will not be subject to the same new or revised accounting standards at the same time as other public companies that comply with such new or revised accounting standards on a non-delayed basis. As a result, our consolidated financial statements may not be comparable to companies that comply with public company effective dates.

For certain risks related to our status as an emerging growth company, see “*Risk Factors—Risks Related to this Offering and Our Common Stock—We are an “emerging growth company” under the JOBS Act of 2012 and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.*”

Smaller Reporting Company Status

We also qualify as a “smaller reporting company”, as defined in Rule 405 under the Securities Act of 1933, as amended (the “Securities Act”). We will continue to be a smaller reporting company so long as either (i) the market value of our securities held by non-affiliates is less than \$250 million as of the last business day of our most recently completed second fiscal quarter, or (ii) our annual revenue was less than \$100 million during our most recently completed fiscal year and the market value of the shares of our common stock held by non-affiliates is less than \$700 million as of the last business day of our most recently completed second fiscal quarter. If we continue to qualify as 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. In particular, for so long as we remain a smaller reporting company, we (i) may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K, (ii) are not required to have an auditor report on our internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and (iii) have reduced disclosure obligations regarding executive compensation.

THE OFFERING

The following is a brief summary of some of the terms of the offering and is qualified in its entirety by reference to the more detailed information appearing elsewhere in this prospectus.

Common stock offered by us Up to _____ shares of our common stock and Series B warrants to purchase up to _____ shares of common stock, or pre-funded warrants to purchase shares of common stock and Series B warrants to purchase shares of common stock. The shares of common stock and Series B warrants are immediately separable and will be issued separately in this offering but must initially be purchased together in this offering. Each Series B warrant has an exercise price of \$ _____ per share of common stock, will be exercisable upon issuance and will expire _____, 2029. We are also registering up to _____ shares of common stock issuable upon exercise of the Series B warrants, pre-funded warrants and placement agent warrants pursuant to this prospectus.

Pre-funded warrants offered by us We are also offering to those purchasers, if any, whose purchase of the common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or at the election of the purchaser, 9.99%) of our outstanding common stock immediately following consummation of this offering, the opportunity to purchase, if they so choose, pre-funded warrants in lieu of the common stock that would otherwise result in ownership in excess of 4.99% (or 9.99%, as applicable) of our outstanding common stock.

The purchase price of each pre-funded warrant will equal the price per share of common stock being sold to the public in this offering, minus \$0.0001, and the exercise price of each pre-funded warrant will be \$0.0001 per share.

Each pre-funded warrant will be immediately exercisable and may be exercised at any time until exercised in full. There is no expiration date for the pre-funded warrants. To better understand the terms of the pre-funded warrants, you should carefully read the “Description of Securities We Are Offering” section of this prospectus. You should also read the form of pre-funded warrant, which is filed as an exhibit to the registration statement that includes this prospectus.

Common stock to be outstanding after this offering _____ shares of common stock, assuming no sale of any pre-funded warrants and no exercise of the Series B warrants being offered in this offering. To the extent pre-funded warrants are sold, the number of shares of common stock sold in this offering will be reduced on a one-for-one basis.

Use of proceeds

We estimate that the net proceeds of this offering based upon an assumed public offering price of \$ _____ per share and accompanying Series B warrant, after deducting placement agent fees and estimated offering expenses, will be approximately \$ _____ million, assuming we sell only shares of common stock and no pre-funded warrants and assuming no exercise of the warrants. We intend to use all of the net proceeds we receive from this offering for working capital and general corporate purposes.

Assuming that we receive a minimum of \$ _____ of proceeds from this offering, we believe that the net proceeds from this offering, together with our cash on hand, will satisfy our capital needs until _____ under our current business plan and assuming that we receive \$ _____ of proceeds from this offering, we believe that the net proceeds from this offering, together with our cash on hand, will satisfy our capital needs until _____ under our current business plan.

Following this offering, we will need to raise additional capital to fund our operations and continue to support our planned development and commercialization activities. See "Use of Proceeds" for additional information.

4

Risk factors

Investing in our securities involves a high degree of risk. You should carefully consider the information under "Risk Factors" in this prospectus and the other risks identified in the documents included or incorporated by reference in this prospectus before deciding to invest in our common stock.

NASDAQ Stock Market symbol

"TFFP"

The number of shares of our common stock to be outstanding after this offering is based on 2,519,220 shares of our common stock outstanding as of April 4, 2024, and excludes the following:

- 233,340 shares of common stock issuable upon exercise of options outstanding as of April 4, 2024, which have a weighted average exercise price of \$74.63 per share;
- 46,007 shares of common stock reserved for issuance and available for future grant under our 2018 Stock Incentive Plan and 2021 Stock Incentive Plan as of April 4, 2024;
- 405,692 shares of common stock issuable upon exercise of warrants outstanding as of April 4, 2024, which have a weighted average exercise price of \$26.99 per share;
- _____ shares of common stock issuable upon exercise of the Series B warrants;
- _____ shares of common stock issuable upon exercise of the pre-funded warrants; and
- _____ shares of common stock issuable upon exercise of the placement agent warrants.

5

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Those forward-looking statements include our expectations, beliefs, intentions and strategies regarding the future. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning the following:

- our future financial and operating results;
- our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;
- the timing and success of our plan of commercialization;
- our ability to successfully develop and clinically test our product candidates;
- our ability to file for FDA approval of our product candidates through the 505(b)(2) regulatory pathway;
- our ability to obtain FDA approval for any of our product candidates;
- our ability to comply with all U.S. and foreign regulations concerning the development, manufacture and sale of our product candidates;
- our ability to raise additional capital as and when needed;
- the effects of market conditions on our stock price and operating results;
- our ability to maintain, protect and enhance our intellectual property;
- the effects of increased competition in our market and our ability to compete effectively;

- costs associated with initiating and defending intellectual property infringement and other claims;
- the attraction and retention of qualified employees and key personnel;
- future acquisitions of or investments in complementary companies or technologies; and
- our ability to comply with evolving legal standards and regulations, particularly concerning requirements for being a public company.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under the heading "Risk Factors" and elsewhere in this prospectus. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for us to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this prospectus, the reports incorporated by reference and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before investing in our securities, you should carefully consider the risks described below and discussed under the section captioned "Risk Factors" contained in our 2023 Form 10-K as well as any amendment or update to our risk factors reflected in subsequent filings with the SEC, which are incorporated by reference in this prospectus, and all other information contained in this prospectus and incorporated by reference in this prospectus. Each of these risk factors, either alone or taken together, could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock. There may be additional risks that we do not presently know of or that we currently believe are immaterial, which could also impair our business and financial position. If any of the events described below were to occur, our financial condition, our ability to access capital resources, our results of operations and/or our future growth prospects could be materially and adversely affected and the market price of our common stock could decline. As a result, you could lose some or all of any investment you may make in our common stock.

Risks Related to this Offering and Our Common Stock

As an investor, you may lose all of your investment.

Investing in our common stock involves a high degree of risk. As an investor, you may never recoup all, or even part, of your investment and you may never realize any return on your investment. You must be prepared to lose all of your investment.

We expect we will need additional financing in addition to the proceeds of this offering to execute our business plan and fund operations, which additional financing may not be available on reasonable terms, or at all. Our consolidated financial statements have been prepared assuming that we will continue as a going concern.

Our ability to continue as a going concern will require us to obtain additional capital to fund our operations over the twelve months from the date of this prospectus. As of December 31, 2023, we had total assets of approximately \$12.0 million and working capital of approximately \$5.2 million. As of December 31, 2023, our liquidity included approximately \$5.5 million of cash and cash equivalents. In addition to our cash on hand at year end, on March 22, 2024, we completed a registered direct offering of 147,500 shares of our common stock for the gross proceeds of approximately \$1.2 million before deducting placement agent fees and other offering expenses. We intend to seek additional funds through various financing sources, including the sale of our equity and debt securities, licensing fees for our technology and co-development and joint ventures with industry partners, with a preference towards licensing fees for our technology and co-development and joint ventures with industry partners. In addition, we will consider alternatives to our current business plan that may enable us to achieve revenue producing operations and meaningful commercial success with a smaller amount of capital. However, there can be no guarantees that such funds will be available on commercially reasonable terms, if at all. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations, in which case you may lose your entire investment.

The report of our independent registered public accounting firm for the year ended December 31, 2023 states that due to our lack of revenue from commercial operations, significant losses and need for additional capital, there is substantial doubt about our ability to continue as a going concern.

This offering is being made on a best efforts basis and we may sell fewer than all of the securities offered hereby and may receive significantly less in net proceeds from this offering, which will provide us only limited working capital.

This offering is being made on a best efforts basis and we may sell fewer than all of the securities offered hereby and may receive significantly less in net proceeds from this offering. Assuming that we receive net proceeds of approximately \$ _____ million from this offering (assuming an offering with gross proceeds of \$ _____ million), we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will meet our capital needs for the next _____ months under our current business plan. Assuming that we receive net proceeds of approximately \$ _____ million from this offering (assuming an offering with gross proceeds of \$ _____ million), we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will satisfy our capital needs for the next months under our current business plan. Assuming that we receive net proceeds of approximately \$ _____ million from this offering (assuming an offering with gross proceeds of \$ _____ million), we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will satisfy our capital needs for the next months under our current business plan. Without giving effect to the receipt of any proceeds from this offering, we currently estimate that our existing cash and cash equivalents are sufficient to fund business operations into _____.

Because we will have broad discretion and flexibility in how the net proceeds from this offering are used, we may use the net proceeds in ways in which you disagree.

We intend to use the net proceeds from this offering for working capital and general corporate purposes. See "Use of Proceeds" for additional information. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the net proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment.

The market price of our common stock is subject to wide fluctuations in response to various factors, some of which are beyond our control. Since shares of our common stock were sold in our initial public offering in October 2019 at a price of \$125.00 per share, the reported high and low sales prices of our common stock have ranged from \$5.15 to \$528.50 through March 22, 2024. The market price of our shares on the NASDAQ Capital Market may fluctuate as a result of a number of factors, some of which are beyond our control, including, but not limited to:

- actual or anticipated variations in our and our competitors' results of operations and financial condition;
- market acceptance of our product candidates;
- changes in earnings estimates or recommendations by securities analysts, if our shares are covered by analysts;
- development of technological innovations or new competitive products by others;
- announcements of technological innovations or new products by us;
- publication of the results of preclinical or clinical trials for our product candidates;
- failure by us to achieve a publicly announced milestone;
- delays between our expenditures to develop and market new or enhanced products and the generation of sales from those products;
- developments concerning intellectual property rights, including our involvement in litigation brought by or against us;
- regulatory developments and the decisions of regulatory authorities as to the approval or rejection of new or modified products;
- changes in the amounts that we spend to develop, acquire or license new products, technologies or businesses;
- changes in our expenditures to promote our product candidates;

8

- our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future;
- changes in key personnel;
- success or failure of our research and development projects or those of our competitors;
- the trading volume of our shares; and
- general economic and market conditions and other factors, including factors unrelated to our operating performance.

There is no public market for the Series B warrants or pre-funded warrants being offered by us in this offering.

There is no established public trading market for the Series B warrants or the pre-funded warrants, and we do not expect a market to develop. In addition, we do not intend to apply to list the Series B warrants or pre-funded warrants on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the Series B warrants and pre-funded warrants will be limited.

The Series B warrants and pre-funded warrants in this offering are speculative in nature.

The Series B warrants and pre-funded warrants offered hereby do not confer any rights of share of common stock ownership on their holders, such as voting rights, but rather merely represent the right to acquire shares of common stock at a fixed price. Specifically, commencing on the date of issuance, holders of the Series B warrants may acquire the shares of common stock issuable upon exercise of such warrants at an exercise price of \$ _____ per share of common stock, and holders of the pre-funded warrants may acquire the shares of common stock issuable upon exercise of such warrants at an exercise price of \$0.0001 per share of common stock. Moreover, following this offering, the market value of the Series B warrants and pre-funded warrants is uncertain and there can be no assurance that the market value of the Series B warrants or pre-funded warrants will equal or exceed their respective public offering prices. There can be no assurance that the market price of the shares of common stock will ever equal or exceed the exercise price of the Series B warrants or pre-funded warrants, and consequently, whether it will ever be profitable for holders of Series B warrants to exercise the warrants or for holders of the pre-funded warrants to exercise the pre-funded warrants.

Holders of the Series B warrants and pre-funded warrants offered hereby will have no rights as common stockholders with respect to the shares of our common stock underlying the warrants until such holders exercise their warrants and acquire our common stock, except as otherwise provided in the Series B warrants and pre-funded warrants.

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

This is a best efforts offering, with no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business plans, including our near-term business plans.

The placement agent has agreed to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The placement

agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to support our continued operations, including our near-term continued operations. Thus, we may not raise the amount of capital we believe is required for our operations in the short-term and may need to raise additional funds, which may not be available or available on terms acceptable to us.

Because the public offering price of our common stock offered hereby is substantially higher than the net tangible book value per share of our outstanding common stock following this offering, new investors will experience immediate and substantial dilution.

Because the price per share of our common stock offered hereby is substantially higher than the net tangible book value per share of our common stock following this offering, you will suffer substantial dilution in the net tangible book value of the common stock offered hereby. See "Dilution" for a more detailed discussion of the dilution you will incur if you purchase shares of our common stock in this offering.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If industry analysts cease coverage of us, the trading price for our common stock would be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline. In addition, independent industry analysts may provide reviews of our product candidates and our TFF platform's capabilities, as well as those of our competitors, and perception of our offerings in the marketplace may be significantly influenced by these reviews. We have no control over what these industry analysts report, and because industry analysts may influence current and potential customers, our brand could be harmed if they do not provide a positive review of our products and platform capabilities or view us as a market leader.

Future capital raises may dilute your ownership and/or have other adverse effects on our operations .

If we raise additional capital by issuing equity securities, our existing stockholders' percentage ownership will be reduced and these stockholders may experience substantial dilution. If we raise additional funds by issuing debt securities, these debt securities would have rights senior to those of our common stock and the terms of the debt securities issued could impose significant restrictions on our operations, including liens on our assets. If we raise additional funds through collaborations and licensing arrangements, we may be required to relinquish some rights to our intellectual property or candidate products, or to grant licenses on terms that are not favorable to us.

We are an "emerging growth company" under the JOBS Act of 2012 and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or JOBS Act, and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements;
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments; and
- extended transition periods available for complying with new or revised accounting standards.

We have chosen to take advantage of all of the benefits available under the JOBS Act, including the exemptions discussed above. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We will remain an "emerging growth company" for up to five years, although we will lose that status sooner if our revenues exceed \$1.235 billion, if we issue more than \$1 billion in non-convertible debt in a three year period, or if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of June 30 in any future year.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

We are required to provide a report on management's assessment of our internal control over financial reporting. Once we are neither an emerging growth company nor a non-accelerated filer, we will be required to obtain an attestation from our independent registered public accounting firm on our internal control report. Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 of the Sarbanes-Oxley Act, or the subsequent testing by our independent registered public accounting firm when required, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retrospective changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common shares. There is also a risk that neither we nor our independent registered public accounting firm (when applicable in the future) will be able to conclude within the prescribed timeframe that internal controls over financial reporting is effective as required by Section 404. As a result, investors could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.

We have not paid dividends in the past and have no immediate plans to pay dividends .

We plan to reinvest all of our earnings, to the extent we have earnings, to cover operating costs and otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

We may be at an increased risk of securities class action litigation.

Historically, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable.

The provisions of our Second Amended and Restated Certificate of Incorporation, or Certificate, and Amended and Restated Bylaws, or Bylaws, and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our Certificate and Bylaws:

- limit who may call stockholder meetings;
- do not provide for cumulative voting rights; and
- provide that all board vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

Our Certificate and Bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Provisions in our Certificate and Bylaws provide that the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the sole and exclusive forum for:

- any derivative action or proceeding brought on our behalf;
- any action asserting a claim of breach of a fiduciary duty owed to us or our stockholders by any of our directors, officers or other employees;
- any action asserting a claim against us or any of our directors, officers or other employees arising pursuant to any provision of Delaware law or our charter documents; or
- any action asserting a claim against us or any of our directors, officers or other employees governed by the internal affairs doctrine, but excluding actions to enforce a duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction.

These exclusive forum provisions do not apply to claims under the Securities Act or the Exchange Act. These exclusive forums provisions, however, do provide that if no state court located in the State of Delaware has jurisdiction, the federal district court for the District of Delaware shall be the exclusive forum. By becoming a stockholder in our company, you will be deemed to have notice of and have consented to the provisions of our Certificate and amended and restated bylaws related to choice of forum, but will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. The choice of forum provisions in our Certificate and amended and restated bylaws may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or any of our directors, officers or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our Certificate and amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations and financial condition.

USE OF PROCEEDS

We estimate that the net proceeds we will receive from the sale of our securities in this offering, assuming all the securities we are offering are sold, after deducting placement agent fees and other estimated offering expenses payable by us, and assuming no sale of any pre-funded warrants and no exercise of the Series B warrants being issued in this offering, will be approximately \$ _____ million, based on an assumed public offering price of \$ _____ per share and accompanying Series B warrants.

However, because this is a best efforts offering and there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, the placement agent fees and net proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth on the cover page of this prospectus.

We expect to use the net proceeds from this offering for working capital and general corporate purposes. This represents our best estimate of the manner in which we will use the net proceeds we receive from this offering based upon the current status of our business, but we have not reserved or allocated amounts for specific purposes and we cannot specify with certainty how or when we will use any of the net proceeds. The amounts and timing of our actual use of the net proceeds from this offering will vary depending on numerous factors, including the factors described under "Risk Factors" located elsewhere in this prospectus or in the information incorporated by reference herein or therein. As a result, our management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds from this offering.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We intend to retain all available funds and future earnings, if any, for development and expansion of our business. Any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors deems relevant. Investors should not purchase our common stock with the expectation of receiving cash dividends.

13

DILUTION

If you invest in our securities in this offering, your ownership interest may be diluted immediately depending on the difference between the public offering price per share of our common stock (assuming the exercise for cash of all pre-funded warrants issued in this offering) and the as adjusted net tangible book value per share of our common stock immediately after this offering (assuming the exercise for cash of all pre-funded warrants issued in this offering).

Our net tangible book value as of December 31, 2023 was approximately \$9.6 million, or approximately \$4.04 per share. Net tangible book value is determined by subtracting our total liabilities from our total tangible assets, and net tangible book value per share is determined by dividing our net tangible book value by the number of outstanding shares of our common stock.

After giving further effect to the sale and issuance of _____ shares of common stock and (or pre-funded warrants) in this offering, at a public offering price of \$ _____ per share and \$ _____ per pre-funded warrant, and deducting placement agent fees and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2023, would have been approximately \$ _____, or \$ _____ per share of our common stock (assuming the exercise for cash of all pre-funded warrants issued in this offering). This represents an immediate increase in net tangible book value of approximately \$ _____ per share to our existing stockholders and an immediate dilution in net tangible book value of approximately \$ _____ per share to investors participating in this offering.

The effect per share to investors participating in this offering is determined by subtracting the pro forma as adjusted net tangible book value per share after this offering from the public offering price per share paid by investors participating in this offering. The final public offering price will be determined through negotiation between us, the placement agent and the investors in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price. The following table illustrates this result on a per share basis:

Assumed public offering price per share of common stock and accompanying Series B warrant	\$
Net tangible book value per share as of December 31, 2023	\$ 4.04
Increase per share attributable to investors participating in this offering	\$
Adjusted net tangible book value per share after giving effect to this offering	\$
Dilution per share to investors participating in this offering	\$

A \$ _____ increase in the assumed public offering price per share and accompanying Series B warrant would decrease the pro forma as adjusted net tangible book value by \$ _____ per share and result in dilution to investors participating in this offering of \$ _____ per share, and a \$ _____ decrease in the assumed public offering price per share and accompanying Series B warrant would decrease the pro forma as adjusted net tangible book value by \$ _____ per share and be accretive to investors participating in this offering by \$ _____ per share, in each case assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and assuming no pre-funded warrants are sold in this offering, no exercise of the Series B warrants being offered in this offering, that no value is attributed to such Series B warrants and that such Series B warrants are classified as and accounted for as equity, and after deducting placement agent fees and estimated expenses payable by us.

An increase of _____ shares in the number of shares offered by us in this offering would decrease our pro forma as adjusted net tangible book value per share by approximately \$ _____ and our pro forma as adjusted net tangible book value per share would be \$ _____, representing an increase in pro forma as adjusted net tangible book value per share to new investors in this offering of \$ _____. A decrease of _____ shares in the number of shares offered by us in this offering would decrease our pro forma as adjusted net tangible book value per share by approximately \$ _____ resulting in a pro forma as adjusted net tangible book value per share of \$ _____ and an increase in pro forma as adjusted net tangible book value per share to investors participating in this offering of \$ _____ per share. The foregoing calculations assume that the public offering price remains the same, and are after deducting placement agent fees and estimated expenses payable by us.

14

The number of shares of our common stock to be outstanding after this offering is based on 2,519,220 shares of our common stock outstanding as of April 4, 2024, and excludes the following:

- 233,340 shares of common stock issuable upon exercise of options outstanding as of April 4, 2024, which have a weighted average exercise price of \$74.63 per share;
- 46,007 shares of common stock reserved for issuance and available for future grant under our 2018 Stock Incentive Plan and 2021 Stock Incentive Plan as of April 4, 2024;
- 405,692 shares of common stock issuable upon exercise of warrants outstanding as of April 4, 2024, which have a weighted average exercise price of \$26.99 per share;
- _____ shares of common stock issuable upon exercise of the Series B warrants;
- _____ shares of common stock issuable upon exercise of the pre-funded warrants; and
- _____ shares of common stock issuable upon exercise of the placement agent warrants.

To the extent that outstanding options or warrants are exercised, or shares are issued under our equity incentive plans, you may experience 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, in the future, additional capital is raised through the sale of equity, convertible debt securities, or securities with equity components, those issuances may result in dilution to our stockholders.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes the most important terms of our capital stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this "Description of Capital Stock," you should refer to our amended and restated certificate of incorporation and amended and restated bylaws and investor rights agreement, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law.

Our authorized capital stock consists of 180,000,000 shares of common stock, \$0.001 par value per share.

There are 2,519,220 shares of our common stock outstanding as of the date of this prospectus.

As of the date of this prospectus, we had six stockholders of record of our common stock.

Common Stock

The holders of common stock are entitled to one vote for each share of common stock. The holders of common stock are entitled to any dividends that may be declared by the Board out of funds legally available for payment of dividends at such times and in such amounts as the Board in its discretion. In the event of any liquidation, dissolution or winding up of the Company, holders of common stock are entitled to receive the assets of the Company available for distribution to its stockholders ratably in proportion to the number of shares of common stock held by the holders of common stock. The holders of shares of common stock have no preemptive, conversion, subscription rights or cumulative voting rights.

Warrants

We have outstanding the following warrants to purchase shares of our common stock:

- In connection with our November 2019 initial public offering, we issued warrants to purchase 8,745 shares of our common stock to the underwriter. Each warrant is exercisable at an exercise price of \$156.25 per share and expires on October 24, 2024.
- In connection with our November 2022 public offering, we issued common stock purchase, which we refer to as our Series A warrants, to purchase 213,500 shares of our common stock. Each warrant is immediately exercisable on the date of issuance at an exercise price of \$32.25 per share and expires five years from the date of issuance.
- In connection with our August 2023 public offering, we issued warrants to purchase 18,304 shares of our common stock to the underwriter. Each warrant is exercisable commencing on the 180th day following the closing date of the August 2023 offering at an exercise price of \$7.81 per share and expires five years from the closing date of the August 2023 offering.
- In connection with our March 2024 registered direct offering and concurrent private placement, we issue to the investors warrants to purchase up to 147,500 shares of our common stock. Each warrant is immediately exercisable on the date of issuance at an exercise price of \$8.00 per share and expires 5.5 years from the date of issuance. We also issued to the placement agent warrants to purchase up to 10,325 shares of our common stock. Each warrant is immediately exercisable on the date of issuance at an exercise price of \$10.00 per share and expires five years from the date of issuance.
- We have also issued warrants to purchase 7,315 shares of our common stock to various parties over the years with an average exercise price of \$133.59 per share.

Equity Compensation Plan Information

We have adopted the TFF Pharmaceuticals, Inc. 2018 Stock Incentive Plan ("2018 Plan") providing for the grant of non-qualified stock options and incentive stock options to purchase shares of our common stock and for the grant of restricted and unrestricted share grants. We reserved 131,379 shares of our common stock under the 2018 Plan. All officers, directors, employees and consultants to our company are eligible to participate under the 2018 Plan. The purpose of the 2018 Plan is to provide eligible participants with an opportunity to acquire an ownership interest in our company.

In September 2021, we adopted the TFF Pharmaceuticals, Inc. 2021 Stock Incentive Plan ("2021 Plan"), which was also approved by our stockholders at our annual meeting of stockholders held on November 4, 2021. The 2021 Plan provides for the grant of non-qualified stock options and incentive stock options to purchase shares of our common stock, the grant of restricted and unrestricted share awards and grant of restricted stock units. We reserved 168,000 shares of our common stock under the 2021 Plan. All of our employees and any subsidiary employees (including officers and directors who are also employees), as well as all of our nonemployee directors and other consultants, advisors and other persons who provide services to us will be eligible to receive incentive awards under the 2021 Plan.

The following table sets forth certain information as of December 31, 2023 about our stock plans under which our equity securities are authorized for issuance.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options	(b) Weighted- Average Exercise Price of Outstanding Options	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected In Column (a))
Equity compensation plans approved by security holders	233,340	\$ 74.63	46,007

Equity compensation plans not approved by security holders

Total	233,340	\$ 74.63	46,007
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Dividends

We do not anticipate the payment of cash dividends on our common stock in the foreseeable future.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Charter Documents

The following is a summary of certain provisions of Delaware law and our amended and restated certificate of incorporation and amended and restated bylaws. This summary does not purport to be complete and is qualified in its entirety by reference to the corporate law of Delaware and our amended and restated certificate of incorporation and amended and restated bylaws.

Delaware Law

We are subject to Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination (as defined below) with any interested stockholder (as defined below) for a period of three years following the date that the stockholder became an interested stockholder, unless:

- o prior to that date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- o upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares of voting stock outstanding (but not the voting stock owned by the interested stockholder) those shares owned by persons who are directors and officers and by excluding employee stock plans in which employee participants do not have the right to determine whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- o on or subsequent to that date, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines "business combination" to include the following:

- o any merger or consolidation involving the corporation and the interested stockholder;
- o any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;

17

- o subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- o subject to limited exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- o the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation, or who beneficially owns 15% or more of the outstanding voting stock of the corporation at any time within a three-year period immediately prior to the date of determining whether such person is an interested stockholder, and any entity or person affiliated with or controlling or controlled by any of these entities or persons.

Our Charter Documents

Our charter documents include provisions that could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. These provisions are intended to enhance the likelihood of continued stability in the composition of our Board and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions may have the effect of discouraging, delaying or preventing a change in control or an unsolicited acquisition proposal that a stockholder might consider favorable, including a proposal that might result in the payment of a premium over the market price for the shares held by our stockholders. Certain of these provisions are summarized in the following paragraphs.

Effects of authorized but unissued common stock and preferred stock. One of the effects of the existence of authorized but unissued common stock and preferred stock may be to enable our Board to make more difficult or to discourage an attempt to obtain control of our Company by means of a merger, tender offer, proxy contest or otherwise, and thereby to protect the continuity of management. If, in the due exercise of its fiduciary obligations, the Board were to determine that a takeover proposal was not in our best interest, such shares could be issued by the Board without stockholder approval in one or more transactions that might prevent or render more difficult or costly the completion of the takeover transaction by diluting the voting or other rights of the proposed acquirer or insurgent stockholder group, by putting a substantial voting block in institutional or other hands that might undertake to support the position of the incumbent Board, by effecting an acquisition that might complicate or preclude the takeover, or otherwise.

Cumulative Voting. Our amended and restated certificate of incorporation does not provide for cumulative voting in the election of directors, which would allow holders of less than a majority of the stock to elect some directors.

Vacancies. Our amended and restated bylaws provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

Special Meeting of Stockholders and Stockholder Action by Written Consent. A special meeting of stockholders may only be called by our Board or the chairperson of our Board. All stockholder actions must be effected at a duly called meeting of stockholders and not by written consent.

Advance Notice Provisions. Our amended and restated bylaws provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our amended and restated bylaws will also specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude our

stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Choice of Forum. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine.

Transfer Agent and Registrar

The transfer agent and registrar for our shares of common stock is Pacific Stock Transfer. The transfer agent and registrar's address is 6725 Via Austi Pkwy, Suite 300, Las Vegas, Nevada 89119.

National Securities Exchange Listing

Our common stock is listed on the Nasdaq Stock Market under the symbol "TFFP."

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering up to _____ shares of our common stock and accompanying Series B warrants to purchase up to _____ shares of common stock. We are also offering up to _____ pre-funded warrants to those purchasers whose purchase of shares of common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock following the consummation of this offering in lieu of the shares of common stock that would result in such excess ownership. Each pre-funded warrant will be exercisable for one share of common stock. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. No warrants for fractional shares of common stock will be issued, rather warrants will be issued only for whole shares of common stock. We are also registering the shares of common stock issuable from time to time upon exercise of the pre-funded warrants and Series B warrants offered hereby.

Common Stock

The material terms and provisions of our common stock are described under the caption "*Description of Capital Stock*" in this prospectus.

Series B Warrants

The following is a summary of certain terms and provisions of the Series B warrants that are being offered hereby and is not complete and is subject to, and qualified in its entirety by, the provisions of the Series B warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Series B warrants for a complete description of the terms and conditions of the Series B warrants.

Duration and Exercise Price

Each Series B warrant offered hereby will have an exercise price equal to \$ _____. The Series B warrants will be immediately exercisable and may be exercised until the five-year anniversary of the issuance date. The exercise price and number of shares of common stock issuable upon exercise of the Series B warrants are subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock. The Series B warrants will be issued separately from the common stock or pre-funded warrants, respectively, and may be transferred separately immediately thereafter.

Exercisability

The Series B warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of such holder's Series B warrants to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding common stock immediately after exercise. However, upon notice from the holder to us, the holder may decrease or increase the holder's beneficial ownership limitation, which may not exceed 9.99% of the number of outstanding shares of common stock immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants, provided that any increase in the beneficial ownership limitation will not take effect until 61 days following notice to us.

Cashless Exercise

If, at the time a holder exercises its Series B warrants, a registration statement registering the issuance or resale of the shares of common stock underlying the Series B warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the Series B warrants.

Fundamental Transactions

In the event of any fundamental transaction, as described in the Series B warrants and generally including any merger or consolidation with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of the Series B warrants, the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of our Company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the Series B warrants are exercisable immediately prior to such event. Notwithstanding the foregoing, in the event of a fundamental transaction, the holders of the Series B warrants have the right to require us or a successor entity to redeem the Series B warrants for cash in the amount of the Black-Scholes Value (as defined in the Common Warrants) of the remaining unexercised portion of the Series B warrants on the date of the consummation of such fundamental transaction, concurrently with or within 30 days following the consummation of a fundamental transaction.

However, in the event of a fundamental transaction which is not in our control, including a fundamental transaction not approved by our Board, the holders of the Series B warrants will only be entitled to receive from us or our successor entity, as of the date of consummation of such fundamental transaction the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of the Series B warrants that are being offered and paid to the holders of our common stock in connection with the fundamental transaction, whether that consideration is in the form of cash, stock or any combination of cash and stock, or whether the holders of our common stock are given the choice to receive alternative forms of consideration in connection with the fundamental transaction.

Transferability

Subject to applicable laws, the Series B warrants may be transferred at the option of the holder upon surrender of the Series B warrants to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the Series B warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no established trading market for the Series B warrants, and we do not expect an active trading market to develop. We do not intend to apply to list the Series B warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the Series B warrants will be extremely limited. The shares of common stock issuable upon exercise of the Series B warrants are currently traded on Nasdaq.

Right as a Stockholder

Except as otherwise provided in the Series B warrants or by virtue of the holder's ownership of shares of our common stock, such holder of Series B warrants does not have the rights or privileges of a holder of our common stock, including any voting rights, until such holder exercises such holder's Series B warrants. The Series B warrants provide that holders have the right to participate in distributions or dividends paid on our shares of common stock.

Waivers and Amendments

No term of the Series B warrants may be amended or waived without the written consent of the holder.

Pre-funded Warrants

The following summary of certain terms and provisions of the pre-funded warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Duration and Exercise Price

Each pre-funded warrant offered hereby will have an initial exercise price per share of common stock equal to \$0.0001. The pre-funded warrants will be immediately exercisable and will expire when exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of share dividends, share splits, reorganizations or similar events affecting our shares of common stock.

Exercisability

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding shares of common stock immediately after exercise. However, upon notice from the holder to us, the holder may decrease or increase the holder's beneficial ownership limitation, which may not exceed 9.99% of the number of outstanding shares of common stock immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants, provided that any increase in the beneficial ownership limitation will not take effect until 61 days following notice to us.

Cashless Exercise

In lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the pre-funded warrants. Rather, at our election, the number of shares of common stock to be issued will be rounded up to the nearest whole number or we will pay a cash adjustment in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrants to us together with the appropriate instruments of transfer.

Trading Market

There is no established trading market for the pre-funded warrants, and we do not expect an active trading market to develop. We do not intend to list the pre-funded warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the pre-funded warrants will be extremely limited. The shares of common stock issuable upon exercise of the pre-funded warrants are currently traded on Nasdaq.

Right as a Stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our shares of common stock, including any voting rights, until such holder exercise their pre-funded warrants. The pre-funded warrants provide that holders have the right to participate in distributions or dividends paid on our shares of common stock.

Placement Agent Warrants

In addition, we have agreed to issue to the placement agent or its designees the placement agent warrants to purchase up to 7.0% of the aggregate number of shares of common stock sold in this offering (including the pre-funded warrants issued in this offering), at an exercise price equal to 125% of the public offering price per share of common stock and accompanying Series B warrant to be sold in this offering. The placement agent warrants will be exercisable upon issuance and will expire five years from the commencement of sales under this offering. The placement agent warrants issued in this offering will otherwise have substantially the same terms as the Series B warrants. The placement agent warrants are registered on the registration statement of which this prospectus is a part. The form of the placement agent warrant has been included as an exhibit to this registration statement of which this prospectus forms a part.

21

PLAN OF DISTRIBUTION

We have engaged _____ to act as our exclusive placement agent to solicit offers to purchase the securities offered by this prospectus on a reasonable best-efforts basis. The placement agent is not purchasing or selling any securities, nor are they required to arrange for the purchase and sale of any specific number or dollar amount of securities, other than to use their "reasonable best efforts" to arrange for the sale of the securities by us. Therefore, we may not sell the entire amount of securities being offered pursuant to this prospectus.

The terms of this offering are subject to market conditions and negotiations between us, the placement agent and prospective investors. The placement agent will have no authority to bind us by virtue of the engagement letter. This is a best-efforts offering and there is no minimum amount of proceeds that is a condition to closing of this offering. Investors purchasing securities offered hereby will have the option to execute a securities purchase agreement with us. In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers who enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract is material to larger purchasers in this offering as a means to enforce the following covenants uniquely available to them under the securities purchase agreement: (i) a covenant to not enter into variable rate financings for a period of two years following the closing of the offering, subject to an exception; and (ii) a covenant to not enter into any equity financings for 45 days from closing of the offering, subject to certain exceptions. The placement agent may engage one or more sub-agents or selected dealers in connection with the offering.

The nature of the representations, warranties and covenants in the securities purchase agreements shall include:

- standard issuer representations and warranties on matters such as organization, qualification, authorization, no conflict, no governmental filings required, current in SEC filings, no litigation, labor or other compliance issues, environmental, intellectual property and title matters and compliance with various laws such as the Foreign Corrupt Practices Act; and
- covenants regarding matters such as registration of warrant shares, no integration with other offerings, filing of an 8-K to disclose entering into these securities purchase agreements, no stockholder rights plans, no material nonpublic information, use of proceeds, indemnification of purchasers, reservation and listing of common stock, and no subsequent equity sales for 45 days, subject to certain exceptions.

Delivery of the securities offered hereby is expected to occur on or about _____, 2024, subject to satisfaction of certain customary closing conditions.

Fees and Expenses

The following table shows the per share and accompanying Series B warrant, and per pre-funded warrant and accompanying Series B warrant, and total placement agent fees we will pay in connection with the sale of the securities in this offering based on the offering price of \$ _____ per share and accompanying Series B warrant.

	Per Share and Accompanying Series B Warrant	Per Pre-Funded Warrant and Accompanying Series B Warrant	Total
Public offering price	\$	\$	\$
Placement Agent fees	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$

We have agreed to pay the placement agent a total cash fee equal to 7.0% of the aggregate gross proceeds raised in the offering and a management fee equal to 1.0% of the gross proceeds raised in this offering. We will reimburse the placement agent a non-accountable expense allowance of \$25,000, for its legal fees and expenses and other out-of-pocket expenses in an amount up to \$100,000, and for its clearing expense in an amount up to \$15,950 in connection with this offering. We estimate the total offering expenses of this offering that will be payable by us, excluding the placement agent fees and expenses, will be approximately \$ _____ million. After deducting the placement agent fees and our estimated offering expenses, we expect the net proceeds from this offering to be approximately \$ _____ million.

22

Placement Agent Warrants

In addition, we have agreed to issue the placement agent warrants to the placement agent or its designees to purchase up to 7.0% of the aggregate number of shares of common stock and pre-funded warrants sold in this offering, at an exercise price equal to 125% of the public offering price per share and accompanying Series B warrant to be sold in this offering. The placement agent warrants will be exercisable upon issuance and will expire five years from the commencement of sales under this offering. The Placement Agent Warrants are registered on the registration statement of which this prospectus is a part. The form of the Placement Agent Warrant has been included as an exhibit to this registration statement of which this prospectus forms a part.

Right of First Refusal

Subject to consummation of the offering, we have granted a right of first refusal to the placement agent pursuant to which it has the right to act as the exclusive book-running manager, underwriter or placement agent, as applicable, if we decide to raise capital through a public offering (including an at-the-market facility) or private placement or any other capital-raising financing of equity, equity-linked or debt securities (other than a traditional debt facility or venture debt facility or an equity line of credit) pursuant to which we engage an investment bank or broker/dealer at any time prior to the 12 months following the consummation of this offering, which right of first refusal shall not have a duration of more than three years from the commencement of sales of the offering or the termination date of the engagement agreement in compliance with FINRA Rule 5110(g)(6)(A).

Tail

In the event that any investors that were contacted by the placement agent or were introduced to us by the placement agent during the term of our engagement agreement with the placement agent provide any capital to us in a public or private offering or other financing or capital-raising transaction of any kind (each, a "Tail Financing") within 12 months following the termination or expiration of our engagement agreement with the placement agent, we shall pay the placement agent the cash and warrant compensation provided above on the gross proceeds raised in such Tail Financing from such investors.

Determination of Offering Price

The combined public offering price per share and Series B warrant and the combined public offering price per pre-funded warrant and Series B warrant we are offering and the exercise prices and other terms of the pre-funded warrants and Series B warrants were negotiated between us and the investors, in consultation with the placement agent based on the trading of our common stock prior to this offering, among other things. Other factors considered in determining the public offering prices of the securities we are offering and the exercise prices and other terms of the pre-funded warrants and Series B warrants include the history and prospects of our Company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

Lock-up Agreements

We and each of our officers and directors have agreed with the placement agent to be subject to a lock-up period of 45 days following the date of this prospectus. This means that, during the applicable lock-up period, we and such persons may not offer for sale, contract to sell, or sell any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock, subject to certain customary exceptions. The placement agent may, in its sole discretion and without notice, waive the terms of any of these lock-up agreements. In addition, we have agreed to not issue any securities that are subject to a price reset based on the trading prices of our common stock or upon a specified or contingent event in the future or enter into any agreement to issue securities at a future determined price for a period of two years following the closing date of this offering, subject to an exception. The placement agent may waive this prohibition in its sole discretion and without notice.

23

Indemnification

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

In addition, we will indemnify the purchasers who enter into the securities purchase agreement against liabilities arising out of or relating to (i) any breach of any of the representations, warranties, covenants or agreements made by us in the securities purchase agreement or related documents or (ii) any action instituted against a purchaser by a third party (other than a third party who is affiliated with such purchaser) with respect to the securities purchase agreement or related documents and the transactions contemplated thereby, subject to certain exceptions.

Regulation M

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the sale of our securities offered hereby by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The placement agent will be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the placement agent. Under these rules and regulations, the placement agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

Other Relationships

The placement agent and its affiliates may in the future engage in investment banking transactions and other commercial dealings in the ordinary course of business with us or our affiliates. The placement agent may in the future receive customary fees and commissions for these transactions. However, except as disclosed in this prospectus, we have no present arrangements with the placement agent for any further services.

Electronic Distribution

A prospectus in electronic format may be made available on a website maintained by the placement agent and the placement agent may distribute prospectuses electronically. Other than the prospectus in electronic format, the information on these websites is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the placement agent and should not be relied upon by investors.

Listing

Our common stock is listed on the Nasdaq Stock Market under the symbol "TFFP."

24

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon for us by Greenberg Traurig, LLP, Irvine, California. is acting as

counsel for the placement agent in connection with this offering.

EXPERTS

The consolidated financial statements as of and for the fiscal years ended December 31, 2023 and 2022, incorporated by reference into this prospectus from the Company's Annual Report on Form 10-K for the year ended December 31, 2023 have been so incorporated in reliance on the report (which contains an explanatory paragraph expressing substantial doubt about the Company's ability to continue as a going concern) of Marcum, LLP, an independent registered public accounting firm, as stated in their report which is incorporated by reference herein, and has been so incorporated in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC permits us to "incorporate by reference" the information and reports we file with it. This means that we can disclose important information to you by referring to another document. The information that we incorporate by reference is considered to be part of this prospectus, and later information that we file with the SEC automatically updates and supersedes this information. We incorporate by reference the documents listed below, except to the extent information in those documents is different from the information contained in this prospectus, and all future documents filed with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act (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 unless such Form 8-K expressly provides to the contrary) until we terminate the offering of these securities:

- Our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2023 filed with the SEC on March 28, 2024;
- Our Current Report on [Form 8-K](#) filed with the SEC on March 22, 2024; and
- The description of our common stock set forth in our registration statement on [Form 8-A12B](#) filed with the SEC on October 22, 2019.

To the extent that any statement in this prospectus is inconsistent with any statement that is incorporated by reference and that was made on or before the date of this prospectus, the statement in this prospectus shall supersede such incorporated statement and the incorporated statement shall not be deemed, except as modified or superseded, to constitute a part of this prospectus or the registration statement. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete and, in each instance, we refer you to the copy of each contract or document filed as an exhibit to our various filings made with the SEC.

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

TFF Pharmaceuticals, Inc.
1751 River Run, Suite 400
Fort Worth, Texas 76107
Attention: Corporate Secretary
Telephone: (817) 438-6168
Email: investorinfo@tffpharma.com

25

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement under the Securities Act (SEC File No. 333-) that registers the securities offered hereby. The registration statement, including the exhibits and schedules attached thereto and the information incorporated by reference therein, contains additional relevant information about the securities and our Company, which we are allowed to omit from this prospectus pursuant to the rules and regulations of the SEC. In addition, we file annual, quarterly and current reports and proxy statements and other information with the SEC. Our SEC filings are available on the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available free of charge on our website at www.tffpharma.com. We have not incorporated by reference into this prospectus the information on our website and it is not a part of this document.

26

Up to
Up to
Up to
Up to

Up to
Series B Warrants to Purchase Shares of Common Stock
Pre-Funded Warrants to Purchase Shares of Common Stock
Placement Agent Warrants to Purchase Shares of Common Stock
Shares of Common Stock Underlying the Series B Warrants, Pre-Funded Warrants and Placement Agent Warrants



TFF Pharmaceuticals, Inc.

PRELIMINARY PROSPECTUS

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION**

The following table sets forth all costs and expenses, other than the estimated placement agent fees and commissions payable by us, in connection with the offer and sale of the securities being registered. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee.

	Amount
SEC registration fee	\$ *
FINRA filing fee	*
Printing expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous fees and expenses	*
Total	\$ *

* To be completed by amendment.

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

The following summary is qualified in its entirety by reference to the complete text of any statutes referred to below and the Second Amended and Restated Certificate of Incorporation, or Certificate of Incorporation, of TFF Pharmaceuticals, Inc., a Delaware corporation.

Section 145 of the General Corporation Law of the State of Delaware (the "DGCL") permits a Delaware corporation to 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 (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

In the case of an action by or in the right of the corporation, Section 145 of the DGCL permits a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses that the Court of Chancery or such other court shall deem proper.

Section 145 of the DGCL also permits a Delaware corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under Section 145 of the DGCL.

II-1

Article Sixth of our Certificate of Incorporation states that to the fullest extent permitted by the DGCL our directors shall not be personally liable to us or to our stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended after the date hereof to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Article Seventh of our Certificate of Incorporation requires us, to the fullest extent permitted by applicable law, to provide indemnification of (and advancement of expenses to) our directors and officers, and authorizes us, to the fullest extent permitted by applicable law, to provide indemnification of (and advancement of expenses to) to other employees and agents (and any other persons to which the DGCL permits us to provide indemnification) through bylaw provisions, agreements with such directors, officers, employees, agents or other persons, vote of stockholders or disinterested directors or otherwise, subject only to limits created by the DGCL with respect to actions for breach of duty to our corporation, our stockholders and others.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

None.

ITEM 16. EXHIBITS

Number	Exhibit Description	Method of Filing
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3.1	Second Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on August 20, 2019.
3.2	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Report on Form 10-K filed on March 31, 2023.
3.3	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Report on Form 8-K filed on November 22, 2023.
3.4	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Report on Form 8-K filed on December 19, 2023.
3.5	First Amended and Restated Bylaws of the Registrant	Incorporated by reference from the Registrant's Report on Form 8-K filed on April 6, 2023.
4.1	Specimen Certificate representing shares of common stock of Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on September 27, 2019.
4.2	Warrant dated October 29, 2019 issued to National Securities Corporation	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 27, 2020.
4.3	Warrant dated November 20, 2019 issued to National Securities Corporation	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 27, 2020.

II-2

Number	Exhibit Description	Method of Filing
4.4	Warrant dated August 17, 2023 issued to The Benchmark Company, LLC	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on November 14, 2023.
4.5	Form of Warrant issued to investors in November 2022 follow-on offering	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 31, 2023.
4.6	Form of Warrant issued to private placement investors in March 2024 private placement	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on March 22, 2024.
4.7	Form of Warrant dated March 22, 2024 issued to H.C. Wainwright & Co., LLC	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on March 22, 2024.
4.8	Form of Series B Warrant to be issued in this offering	To be filed by amendment.
4.9	Form of Pre-funded Warrant to be issued in this offering	To be filed by amendment.
4.10	Form of Placement Agent Warrant to be issued in this offering	To be filed by amendment.
5.1	Opinion of Greenberg Traurig, LLP	To be filed by amendment.
10.1*	TFF Pharmaceuticals, Inc. 2018 Stock Incentive Plan	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on August 20, 2019.
10.2*	Employment Agreement dated February 15, 2019, by and between the Registrant and Kirk Coleman	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on August 20, 2019.
10.3*	TFF Pharmaceuticals, Inc. 2021 Stock Incentive Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on September 23, 2021.
10.4	Amended and Restated Patent License Agreement dated April 20, 2022 between the Registrant and The University of Texas at Austin, on behalf of the Board of Regents of the University of Texas System	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on May 11, 2022.
10.5*	Executive Employment Agreement Between Zamaneh Mikhak, M.D. and Registrant	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 31, 2023.

II-3

Number	Exhibit Description	Method of Filing
10.6*	Executive Employment Agreement Between Harlan Weisman, M.D. and Registrant	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 31, 2023.
10.7	Form of Securities Purchase Agreement to be entered into by the Registrant in this offering	To be filed by amendment.
21.1	List of Subsidiaries	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 27, 2020.
23.1	Consent of Marcum, LLP	Filed electronically herewith.
23.2	Consent of Greenberg Traurig, LLP	To be filed by amendment.
24.1	Power of Attorney	Included on signature page hereto.

101.INS	XBRL Instance Document	Filed electronically herewith.
101.SCH	XBRL Taxonomy Extension Schema Document	Filed electronically herewith.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Filed electronically herewith.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Filed electronically herewith.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Filed electronically herewith.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Filed electronically herewith.
107	Filing Fee Table	Filed electronically herewith.

* Indicates management compensatory plan, contract or arrangement.

II-4

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 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 a 20 percent 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 (i), (ii) and (iii) do not apply if the registration statement is on Form S-1 and 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 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *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 first use, 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 date of first use.

(5) 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 Section 15(d) of the Exchange Act of 1934 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 Securities and Exchange 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.

II-5

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Fort Worth, Texas on this 8th day of April, 2024.

TFF PHARMACEUTICALS, INC.

By: /s/ Harlan Weisman
Harlan Weisman, M.D.
Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Harlan Weisman, M.D., his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, any subsequent registration statements pursuant to Rule 462 of the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof. This power of attorney may be executed in counterparts.

Pursuant to the requirements of the Securities Act of 1933, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Harlan Weisman</u> Harlan Weisman, M.D.	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	April 8, 2024
<u>/s/ Kirk Coleman</u> Kirk Coleman	Chief Financial Officer, Treasurer and Secretary <i>(Principal Financial and Accounting Officer)</i>	April 8, 2024
<u>/s/ Brandi Roberts</u> Brandi Roberts	Director	April 8, 2024
<u>/s/ Robert S. Mills, Jr.</u> Robert S. Mills, Jr.	Director	April 8, 2024
<u>/s/ Stephen Rocamboli</u> Stephen Rocamboli	Director	April 8, 2024
<u>/s/ Catherine Lee</u> Catherine Lee	Director	April 8, 2024
<u>/s/ Thomas B. King</u> Thomas B. King	Director	April 8, 2024
<u>/s/ Michael Patane</u> Michael Patane	Director	April 8, 2024

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of TFF Pharmaceuticals, Inc. on Form S-1 of our report dated March 28, 2024, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audits of the consolidated financial statements of TFF Pharmaceuticals, Inc. as of December 31, 2023 and 2022 and for each of the two years in the period ended December 31, 2023, appearing in the Annual Report on Form 10-K of TFF Pharmaceuticals, Inc. for the year ended December 31, 2023. We also consent to the reference to our firm under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Marcum LLP

Marcum LLP
New York, NY
April 8, 2024

Calculation of Filing Fee Tables

Form S-1

(Form Type)

TFF Pharmaceuticals, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (a)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price (b)	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common stock	457(o)			\$ 5,000,000	\$ 147.60 per \$1,000,000	\$ 738.00
	Equity	Series B Warrants	(d)					
	Equity	Warrants to be issued to the placement agent(c)	(d)					
	Equity	Pre-Funded Warrants	(d)(e)					
	Equity	Common stock underlying Series B Warrants	457(o)			\$ 5,000,000	\$ 147.60 per \$1,000,000	\$ 738.00
	Equity	Common stock underlying warrants to be issued to the placement agent	457(o)			\$ 437,500	\$ 147.60 per \$1,000,000	\$ 64.58
	Equity	Common stock underlying Pre-Funded Warrants	(e)	—	—	—	—	—
Fees Previously Paid				—	—	—	—	—
Total Offering Amounts						\$ 10,437,500		\$ 1,540.58
Total Fees Previously Paid								-0-
Total Fee Offsets								-
Net Fee Due								\$ 1,540.58

- (a) In accordance with Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall be deemed to cover an indeterminate number of additional shares of common stock to be offered or issued from stock splits, stock dividends or similar transactions.
- (b) The proposed maximum aggregate offering price has been estimated solely to calculate the registration fee in accordance with Rule 457(o) under the Securities Act.
- (c) We have agreed to issue to the representative of the placement agent warrants to purchase shares of common stock representing up to 7.0% of the common stock issued in the offering (including the pre-funded warrants issued in the offering). The representative's warrants are exercisable at a per share exercise price equal to 125% of the public offering price per share of the common stock offered hereby.
- (d) No separate registration fee required pursuant to Rule 457(g).
- (e) The registrant may issue pre-funded warrants to purchase shares of common stock in the offering. The purchase price of each pre-funded warrant will equal the price per share at which shares of common shares are being sold to the public in this offering, minus \$0.0001, which constitutes the pre-funded portion of the exercise price, and the remaining unpaid exercise price of the pre-funded warrant will equal \$0.0001 per share (subject to adjustment as provided for therein). The proposed maximum aggregate offering price of the common stock will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants issued in the offering, and the proposed maximum aggregate offering price of the pre-funded warrants to be issued in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any common stock issued in the offering. Accordingly, the proposed maximum aggregate offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is \$5,000,000.