Filed Pursuant to Rule 424(b)(5) Registration No. 333-258994

PROSPECTUS SUPPLEMENT (To Prospectus dated August 30, 2021)

305,590 Shares of Common Stock

Pre-Funded Warrants to Purchase up to 75,000 Shares of Common Stock Up to 75,000 Shares of Common Stock Underlying the Pre-Funded Warrants



We are offering pursuant to this prospectus supplement and accompanying prospectus to an accredited and institutional investor, 305,590 shares of our common stock and a pre-funded warrant to purchase up to 75,000 shares of our common stock, referred to herein as the Pre-Funded Warrant.

The offering price of each share of common stock is \$5.255 per share. The offering price of the Pre-Funded Warrant, calculated on a per underlying share basis, is equal to the offering price per share of common stock being sold in this offering, minus \$0.001, and the exercise price per underlying share of the Pre-Funded Warrant is \$0.001 per share. Subject to limited exceptions, a holder of a Pre-Funded Warrant will not have the right to exercise any portion of its Pre-Funded Warrant if the holder, together with its affiliates, would beneficially own in excess of 9.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise. This prospectus supplement also relates to the offering of shares of our common stock issuable upon the exercise of such Pre-Funded Warrant. Subject to the limitations described above, the Pre-Funded Warrant may be exercised at any time until exercised in full.

In a concurrent private placement, we are also issuing to the same accredited and institutional investor a private placement warrant, or the Private Warrant, to purchase up to an aggregate of 380,590 shares of our common stock. The Private Warrant is immediately exercisable upon issuance for a period of five and one-half years from the issuance date, at an exercise price equal to \$5.13 per share. The Private Warrant and the shares of our common stock issuable upon the exercise of the Private Warrant, or the Private Warrant Shares, are not being registered under the Securities Act of 1933, as amended, or the Securities Act, pursuant to the registration statement of which this prospectus supplement and the accompanying prospectus form a part, nor is such Private Warrant or Private Warrant Shares being offered pursuant to such prospectus supplement and accompanying prospectus. The Private Warrant is being offered pursuant to the exemption provided in Section 4(a)(2) of the Securities Act and/or Rule 506(b) promulgated thereunder. The Private Warrant is being sold together with the shares of common stock and Pre-Funded Warrant being sold in this offering, and we will receive additional proceeds from the Private Warrant to the extent such Private Warrant is exercised for cash.

There is no established trading market for the Pre-Funded Warrants, and we do not expect a market to develop. We do not intend to apply for a listing for the Pre-Funded Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

On March 31, 2023, the date we filed our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, we were subject to the offering limits in General Instruction I.B.6 of Form S-3. As of the date of this Prospectus Supplement, the aggregate market value of our common stock held by non-affiliates pursuant to General Instruction I.B.6 of Form S-3 is \$16,913,762, which was calculated based on 2,385,580 shares of our outstanding common stock held by non-affiliates and a price of \$7.09 per share, the closing price of our common stock on August 2, 2023, which is the highest closing sale price of our common stock on the Nasdaq Capital Market within the prior 60 days. As of the date of this Prospectus Supplement, we have sold an aggregate of \$3,502,551 of shares pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to, and including, the date of this Prospectus Supplement (but excluding this offering). Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in public primary offerings on Form S-3 with a value exceeding one-third of our public float (as defined by General Instruction I.B.6) in any 12 calendar month period so long as our public float remains below \$75.0 million.

We engaged H.C. Wainwright & Co., LLC to act as our exclusive placement agent, or the Placement Agent, in connection with this offering. The Placement Agent is not purchasing the securities offered by us in this offering] and is not required to arrange the purchase or sale of any specific number or dollar amount of securities, but will use its reasonable best efforts to arrange for the sale of the securities offered. We have agreed to pay the Placement Agent the fees set forth in the table below. See "Plan of Distribution" in this prospectus supplement for more information regarding these arrangements.

Our common stock is listed on the Nasdaq Capital Market under the symbol "ELOX." On September 15, 2023, the last reported sale price of the common stock on the Nasdaq Capital Market was \$5.88 per share.

Investing in our securities involves risks. See "Risk Factors" beginning on page $\underline{\text{S-5.}}$

		Per Pre-Funded Warrant Underlying		
	Per Share	Share	Total	
Offering price	\$ 5.255	\$ 5.254	\$1,999,925.45	
Placement agent fees ⁽¹⁾	\$0.3941	\$0.3941	\$ 150,000.03	
Proceeds to us, before expenses	\$4.8609	\$4.8599	\$1,849,925.42	

⁽¹⁾ We have also agreed to (i) issue warrants to purchase up to 22,835 shares of common stock to the Placement Agent, or its designees, and (ii) pay certain expenses to the Placement Agent. See the section captioned "Plan of Distribution" in this prospectus supplement for additional information.

Delivery of the securities is expected to be made on or about September 20, 2023, subject to satisfaction of customary closing conditions.

H. C. Wainwright & Co.

The date of this prospectus supplement is September 18, 2023.

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

TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT

ABOUT THIS PROSPECTUS SUPPLEMENT	<u>S-ii</u>
PROSPECTUS SUPPLEMENT SUMMARY	<u>S-1</u>
THE OFFERING	<u>S-3</u>
RISK FACTORS	<u>S-5</u>
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	<u>S-9</u>
<u>USE OF PROCEEDS</u>	<u>S-10</u>
<u>DIVIDEND POLICY</u>	<u>S-11</u>
<u>DILUTION</u>	<u>S-12</u>
DESCRIPTION OF THE SECURITIES WE ARE OFFERING	<u>S-13</u>
PRIVATE PLACEMENT TRANSACTION	<u>S-15</u>
PLAN OF DISTRIBUTION	<u>S-17</u>
<u>LEGAL MATTERS</u>	<u>S-19</u>
<u>EXPERTS</u>	<u>S-19</u>
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	<u>S-20</u>
PROSPECTUS	
ABOUT THIS PROSPECTUS	<u>1</u>
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	<u>2</u>
THE COMPANY	<u>4</u>
RISK FACTORS	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>6</u>
DESCRIPTION OF CAPITAL STOCK	<u>7</u>
DESCRIPTION OF DEBT SECURITIES	<u>10</u>
DESCRIPTION OF WARRANTS	<u>17</u>
GLOBAL SECURITIES	<u>20</u>
PLAN OF DISTRIBUTION	<u>24</u>
<u>LEGAL MATTERS</u>	<u>26</u>
<u>EXPERTS</u>	<u>26</u>

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under "Where You Can Find More Information; Incorporation by Reference" on page S-20 of this prospectus supplement. These documents contain information you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. Neither we nor the Placement Agent have authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, the securities offered hereby only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the securities offered hereby in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the securities offered hereby and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise indicated, information contained in this prospectus supplement, the accompanying prospectus or the documents incorporated by reference, concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors" in this prospectus supplement, the accompanying prospectus and in our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023, which are incorporated by reference into this prospectus supplement. These and other important factors could cause our future performance to differ materially from our assumptions and estimates. See "Special Note Regarding Forward-Looking Statements."

When we refer to "Eloxx," "we," "our," "us" and the "Company" in this prospectus supplement, we mean Eloxx Pharmaceuticals, Inc. and its consolidated subsidiaries, unless otherwise specified.

This prospectus supplement also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus supplement appear without the [®] and TM symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporate by reference. This summary is not complete and does not contain all of the information you should consider before investing in our securities. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus supplement and the accompanying prospectus, including "Risk Factors" beginning on page §-5 of this prospectus supplement and the financial statements and related notes and the other information that we incorporate by reference into this prospectus supplement.

Our Company

We are a clinical-stage biopharmaceutical company engaged in the science of ribosome modulation, leveraging both our innovative TURBO-ZM™ chemistry technology platform and our library of novel aminoglycosides to develop novel oral small molecule Ribosome Modulating Agents ("RMAs") and Eukaryotic Ribosome Selective Glycosides ("ERSGs"), for the treatment of rare and ultra-rare genetic diseases where patients have point nonsense genetic mutations that result in premature stop codons and less than full length proteins. Nonsense mutations result in premature stop codons in the impacted messenger RNA ("mRNA") which in turn disrupt protein synthesis from that mRNA leading to less than full length proteins. Patients with these mutations have significantly worse outcomes than with missense mutations.

We have multiple programs in our pipeline including a clinical program for the treatment of Alport syndrome with ELX-02 (subcutaneous delivery), preclinical programs in investigational new drug ("IND") enabling stages in Recessive Dystrophic ("RDEB") and Junctional Epidermolysis Bullosa ("JEB") and Familial Adenomatous Polyposis ("FAP") with ZKN-013, and IND enabling stage program with inhaled delivery of ELX-02 in Class 1 cystic fibrosis ("CF"). We also have various earlier discovery stage programs in cystic fibrosis and oncology. As our programs advance, we plan to actively look to expand our pipeline by seeking new indications in other rare diseases for compounds designed with our platforms. The U.S. Food and Drug Administration ("FDA") has granted Fast Track designation for ELX-02 for the treatment of CF patients with nonsense mutations. In addition, the FDA granted ELX-02 Orphan Drug Designation for the treatment of CF in July 2020 and based on the European Medicines Agency's ("EMA") positive opinion, the European Commission granted ELX-02 orphan medicinal product designation in September 2018.

In March 2022, we announced our decision to advance ELX-02 delivered subcutaneously for the restoration of Collagen IV protein for the treatment of Alport syndrome patients. Alport syndrome with nonsense mutations is a genetic kidney disorder that occurs in 1 in 50,000 newborns in the United States. It is caused by the loss of one of three collagen IV subtypes. This disease is characterized by blood (hematuria) and protein (proteinuria) in the patient's urine, and results in progressive kidney disease, hearing loss, and eye abnormalities. In November 2022, we began a Phase 2 monotherapy clinical trial for ELX-02 for the potential treatment of ELX-02 in Alport syndrome. This Phase 2 trial included Alport syndrome patients with nonsense mutations in the COL4 gene. Three patients were dosed with ELX-02 for two months with a three month follow-up. In addition to the primary endpoint of safety, the key secondary efficacy endpoint of proteinuria was measured every two weeks. Treatment effect on proteinuria has been observed to be a validated endpoint for several renal indications and a reliable predictor of treatment outcomes. For eligible patients, induction of COL4 was also measured at the end of two months. In one of these three patients, there was a substantial reduction in the proteinuria, of approximately half. Spontaneous reductions in proteinuria are not expected in this population, providing added weight to this result. Additional results from the Phase 2 ELX-02 trial showed the patient that achieved a remission rebounded one month after withdrawing treatment, providing additional evidence of drug activity. In August, 2023, electron microscopy assessments of kidney biopsies from patients confirmed the disease modifying effect of ELX-02, demonstrated by a reduction in foot process effacement, in all three treated patients. Podocyte foot process effacement occurs in nearly all cases of Alport syndrome. Podocytes are highly specialized cells of the kidney glomerulus critical for a healthy glomerulus. The results of the trial demonstrating a rapid and sustained remission in one patient combined with these electron microscopy results from the patient biopsies showing disease improvement in all three patients confirms the disease modifying potential of ELX-02. Based on these results we intend to advance into a pivotal trial of ELX-02 for the treatment of Alport syndrome with nonsense mutations.

Subject to available funding, we are also advancing ZKN-013 as an oral agent for the treatment of RDEB/JEB and FAP patients with nonsense mutations. RDEB and JEB are rare skin diseases characterized by mutations in Collagen VII (RDEB) and LAMB3(JEB) proteins. We estimate that there are approximately 4,000 patients with nonsense mutations in these diseases in the major markets of the United States, Japan and western Europe. Patients suffer from severe skin bruising, wounds and internal lesions resulting in increased risk of skin cancer and severe malnourishment. FAP patients have mutations in the APC gene that result in a proliferation of polyps in the colon that if untreated can lead to colon and other related cancers. There are currently no approved disease modifying therapies for these diseases. ZKN-013 has demonstrated robust collagen VII restoration in patient cells comparable to 5-10% of protein restoration across a range of mutations. We have also seen in two separate studies, that treatment of APCMin mice, a validated model for evaluating potential treatment effects in FAP patients, with ZKN-013 for eight weeks reduced polyp number, polyp size and meaningfully improved survival.

On May 2, 2023, we announced that the FDA had cleared our IND application for ZKN-013 to initiate a single ascending dose (SAD) clinical trial in healthy volunteers for ZKN-013 for the potential treatment of recessive Dystrophic Epidermolysis Bullosa (RDEB) with nonsense mutations. ZKN-013 is the first molecule developed with our TURBO-ZM TM platform that has advanced from hit to lead and is now eligible to enter clinical development. Further SAD and multiple ascending dose (MAD) testing is expected to be conducted following the completion of the planned dose cohorts in the SAD study and discussion with the FDA

If we proceed with further development of ZKN-013, we will initially only proceed with single doses of 15 mg and 50 mg, as the FDA placed our EL-013 combined SAD-MAD Phase 1, randomized, double-blinded, placebo-controlled, multiple dose escalation clinical trial on partial clinical hold, requiring that we provide clinical pharmacokinetic data from the single clinical doses of 15 mg and 50 mg and simulated steady state exposures following multiple doses before the FDA will approve proceeding with additional doses.

Corporate Information

We were incorporated under the laws of the State of Delaware. Our principal executive offices are located at 480 Arsenal Way, Suite 130, Watertown, Massachusetts 02472, and our telephone number is (781) 577-5300. Our website address is www.eloxxpharma.com. The information contained on our website is not incorporated by reference into this prospectus supplement and the accompanying prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus supplement and the accompanying prospectus or in deciding whether to purchase our securities. Our common stock is listed on the Nasdaq Capital Market under the symbol "ELOX".

THE OFFERING

Common stock offered by us

Pre-Funded Warrants offered by us

305,590 shares of common stock.

We are also offering a Pre-Funded Warrant to purchase up to 75,000 shares of our common stock. The purchase price of the Pre-Funded Warrant, calculated on a per underlying share basis, is equal to the price per share of the shares of common stock being sold in this offering, minus \$0.001, and the exercise price per underlying share of the Pre-Funded Warrant is \$0.001 per share. The Pre-Funded Warrant will be exercisable at any time after the date of issuance thereof, subject to certain beneficial ownership limitations. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon exercise of the Pre-Funded Warrant. See "Description of The Securities We Are Offering — Pre-Funded Warrants" for a discussion on the terms of the Pre-Funded Warrants.

Common stock to be outstanding immediately after this offering

2,873,256 shares, assuming the exercise in full of the Pre-Funded Warrant offered herein, and no exercise of the Private Warrant being issued to in a concurrent private placement transaction.

Offering price

\$5.255 per share of common stock and \$5.254 per underlying share of the Pre-Funded Warrant.

Use of proceeds

We estimate the net proceeds from this offering will be approximately \$1.7 million, after deducting placement agent fees and estimated offering expenses payable by us.

We intend to use the net proceeds of this offering to advance ELX-02, being developed for the treatment of Alport syndrome with nonsense mutations and other rare proteinuric kidney diseases, progress the development of ZKN-013, fund discovery efforts for the company's TURBO-ZM platform and for working capital and other general corporate purposes. Please see "Use of Proceeds" on page <u>S-10</u>.

Risk factors

See "Risk Factors" beginning on page <u>S-5</u> of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement for a discussion of factors that you should read and consider before investing in our securities.

Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol "ELOX. There is no established public trading market for the Pre-Funded Warrant and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Pre-Funded Warrant on the Nasdaq Capital Market or on any national securities or other national recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrant will be limited.

Concurrent private placement of Private Warrant

In a concurrent private placement, we are issuing to the purchaser of our common stock and Pre-Funded Warrant in this offering, a Private Warrant to purchase up to 380,590 shares of our common stock at an exercise price per share equal to

\$5.13 per share. The Private Warrant is being sold together with the shares of common stock and Pre-Funded Warrant being sold in this offering, and we will receive additional proceeds from the Private Warrant to the extent such Private Warrant is exercised for cash. The Private Warrant and the shares of our common stock issuable upon the exercise of the Private Warrant are not being offered pursuant to this prospectus supplement and the accompanying prospectus. See "Private Placement Transaction" on page \$\frac{S-15}{2}\$.

The number of shares of our common stock to be outstanding immediately after this offering is based on 2,492,666 shares of our common stock outstanding as of June 30, 2023 and the assumed exercise of all of the Pre-Funded Warrants offered herein, and excludes:

- 380,590 shares of common stock issuable upon the exercise of the Private Warrant being issued in a concurrent private placement transaction, which have an initial exercise price equal to the offering price per share of common stock being sold in this offering;
- 425,022 shares of our common stock issuable upon the exercise of stock options outstanding as of June 30, 2023 at a weighted average exercise price of \$62.83 per share;
- 1,021 shares of our common stock issuable upon the exercise of warrants outstanding as of June 30, 2023 at a weighted average exercise price of \$440.80 per share;
- 22,835 shares of our common stock issuable upon the exercise of warrants issued to the designees of the Placement Agent as compensation in connection with this offering, at an exercise price of \$6.5688 per share;
- 75,000 shares of our common stock issuable upon the vesting of restricted stock units; and
- an additional 70,134 shares of our common stock that are available for future issuance under our 2018 Equity Incentive Plan as of June 30, 2023, as well as shares that become available pursuant to provisions in 2018 Equity Incentive Plan that automatically increase the share reserve under 2018 Equity Incentive Plan on January 1 of each calendar year.

Unless otherwise indicated, this prospectus supplement reflects and assumes:

- no exercise of the Private Warrants; and
- no exercise of outstanding options and warrants to purchase common stock, and no issuance of shares available for future issuance under our equity compensation plans.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before investing in our securities, you should consider carefully the risks described below, together with the other information contained in this prospectus supplement, the accompanying prospectus or incorporated by reference herein or therein, including the risks and uncertainties discussed under "Risk Factors" in our <u>Annual Report on Form 10-K</u> for the year ended <u>December 31, 2022</u> and our Quarterly Reports on Form 10-Q for the quarters ended <u>March 31, 2023</u> and <u>June 30, 2023</u>, which are incorporated by reference into this prospectus supplement. If any of the risks incorporated by reference or set forth below occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. In these circumstances, the market price of our securities could decline, and you may lose all or part of your investment

Risks Related to this Offering and our Securities

You will experience immediate and substantial dilution as a result of this offering and may experience additional dilution in the future.

Because the price per share of our common stock being offered is higher than the book value per share of our common stock, you will incur substantial dilution in the net tangible book value of the common stock you purchase in this offering. After giving effect to the sale by us of 305,590 shares of common stock at the offering price of \$5.255 per share and Pre-Funded Warrants to purchase up to 75,000 shares of our common stock at an offering price of \$5.255 per share (which equals the \$5.254 per underlying share purchase price, plus the \$0.001 per underlying share exercise price), less the Placement Agent fees and estimated offering expenses payable by us in each case, if you purchase securities in this offering, you will incur immediate and substantial dilution of \$11.14 per share, representing the difference between the offering price per share of \$5.255 and the as adjusted net tangible book value per share of our common stock of \$(7.46) as of June 30, 2023. See "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase our common stock and Pre-Funded Warrants in the offering.

In addition, we are selling a private placement warrant to purchase 380,590 shares of common stock, or the Private Warrant, in a concurrent private placement to the same investor as is purchasing the shares of common stock and the Pre-Funded Warrant, and we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. In the event that the Private Warrant or the other outstanding options or warrants are exercised or settled, or that we make additional issuances of common stock or other convertible or exchangeable securities, you could experience additional dilution. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders, including investors who purchase shares of common stock in this offering. The price per share at which we sell additional shares of our common stock or securities convertible into common stock in future transactions, may be higher or lower than the price per share in this offering. As a result, purchasers of the shares we sell, as well as our existing stockholders, will experience significant dilution if we sell at prices significantly below the price at which they invested. See "Dilution" below for a more detailed illustration of the dilution you would incur if you participate in this offering.

There is no public market for the Pre-Funded Warrant being sold in this offering or the Private Warrant being sold in a private placement concurrently with this offering.

There is no established public trading market for the Pre-Funded Warrant being offered in this offering or the Private Warrant being offered in a private placement concurrently with this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Pre-Funded Warrant or Private Warrant on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the Pre-Funded Warrant and Private Warrant will be limited.

We have broad discretion to determine how to use the funds raised in this offering and the concurrent private placement, and may use them in ways that may not enhance our operating results or the price of our common stock.

Our management will have broad discretion over the use of proceeds from this offering and the concurrent private placement, and we could spend the proceeds from this offering and the concurrent

private placement in ways our stockholders may not agree with or that do not yield a favorable return, if at all. We intend to use the net proceeds to advance ELX-02, being developed for the treatment of Alport syndrome with nonsense mutations and other rare proteinuric kidney diseases, progress the development of ZKN-013, fund discovery efforts for the company's TURBO-ZM platform and for working capital and other general corporate purposes. However, our use of these proceeds may differ substantially from our current plans. If we do not invest or apply the proceeds of this offering and the concurrent private placement in ways that improve our operating results, we may fail to achieve expected financial results, which could cause our stock price to decline and could have an adverse effect on the market price of our common stock.

Any holder of the Pre-Funded Warrant and Private Warrant will have no rights as a holder of our common stock until such holder exercises its Pre-Funded Warrant and/or Private Warrant and acquires our common stock.

Until the holder of any Pre-Funded Warrant or Private Warrant exercises such Pre-Funded Warrant and/or Private Warrant and acquires shares of our common stock, such holder will have no rights with respect to the shares of our common stock underlying such Pre-Funded Warrant or Private Warrant. Upon exercise of such Pre-Funded Warrant or Private Warrant, the holder will be entitled to exercise the rights of a holder of our common stock only as to matters for which the record date occurs after the exercise date.

A significant holder or beneficial holder of our common stock may not be permitted to exercise the Pre-Funded Warrant or Private Warrant that it holds.

A holder of the Pre-Funded Warrant and/or Private Warrant will not be entitled to exercise any portion of the Pre-Funded Warrants or Private Warrants that, upon giving effect to such exercise, would cause the aggregate number of shares of our common stock beneficially owned by such holder (together with its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder for purposes of Section 13(d) of the Exchange Act) to exceed 9.99% (in the case of the Pre-Funded Warrant) or 4.99% (in the case of the Private Warrant) of the total number of then issued and outstanding shares of common stock, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrant or Private Warrant and subject to such holder's rights under the Pre-Funded Warrant and Private Warrant to increase or decrease such percentage to any other percentage not in excess of 9.99% upon at least 61 days' prior notice from such holder to us. As a result, a holder may not be able to exercise its Pre-Funded Warrant or Private Warrant for shares of our common stock at a time when it would be financially beneficial for such holder to do so. In such a circumstance, a holder could seek to sell its Pre-Funded Warrant or Private Warrant to realize value, but it may be unable to do so in the absence of an established trading market.

This offering may cause the trading price of our common stock to decrease.

The price per share, together with the number of shares of common stock and Pre-Funded Warrant we propose to issue and ultimately will issue if this offering is completed and/or the number of shares of our common stock issuable upon exercise the Private Warrant being sold concurrently herewith, may result in an immediate decrease in the market price of our common stock. This decrease may continue after the completion of this offering.

Provisions of the Private Warrant could discourage an acquisition of us by a third party.

Certain provisions of the Private Warrant being sold in a private offering concurrently with this offering could make it more difficult or expensive for a third party to acquire us. The Private Warrant prohibits us from engaging in certain transactions constituting "fundamental transactions" unless, among other things, the surviving entity assumes our obligations under the Private Warrant. Further, the Private Warrant provides that, in the event of certain transactions constituting "fundamental transactions," with some exceptions, holders of such warrants will have the right, at their option, to receive from us or a successor entity the same type or form of consideration (and in the same proportion) that is being offered and paid to the holders of our common stock in the fundamental transaction in the amount of the Black Scholes value (as described in such warrants) of the unexercised portion of the Private Warrant on the date of

the consummation of the fundamental transaction. These and other provisions of the Private Warrant could prevent or deter a third party from acquiring us even where the acquisition could be beneficial to the holders of our common stock.

The Private Warrants may be accounted for as a liability and the changes in value of such Private Warrants may have a material effect on our financial results.

We are currently evaluating the terms of the Private Warrant being sold in a private placement concurrently with this offering. It is possible that we and/or our auditors will conclude that because of the terms of such Private Warrant, such Private Warrant should be accounted for as liability instruments. As a result, we would be required to classify the Private Warrant as a liability. Under the liability accounting treatment, we would be required to measure the fair value of these instruments at the end of each reporting period and recognize changes in the fair value from the prior period in our operating results for the current period. As a result of the recurring fair value measurement, our financial statements and results of operations may fluctuate quarterly based on factors which are outside our control. In the event the Private Warrant is required to be accounted for under liability accounting treatment, we will recognize noncash gains or losses due to the quarterly fair valuation of these warrants which could be material. The impact of changes in fair value on our earnings may have an adverse effect on the market price of our common stock and/or our stockholders' equity, which may make it harder for us to, or prevent us from, meeting the continued listing standards of the Nasdaq Capital Market.

There may be future sales of our common stock, which could adversely affect the market price of our common stock and dilute a stockholder's ownership of common stock.

The exercise of (a) any options granted to executive officers and other employees under our equity compensation plans and (b) any warrants, and other issuances of our common stock could have an adverse effect on the market price of the shares of our common stock. Other than the restrictions set forth in the section titled "Plan of Distribution," we are not restricted from issuing additional shares of common stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive shares of common stock, provided that we are subject to the requirements of the Nasdaq Capital Market (which generally requires stockholder approval for any transactions which would result in the issuance of more than 20% of our then outstanding shares of common stock or voting rights representing over 20% of our then outstanding shares of stock). Sales of a substantial number of shares of our common stock in the public market or the perception that such sales might occur could materially adversely affect the market price of the shares of our common stock. Because our decision to issue securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. Accordingly, our stockholders bear the risk that our future offerings will reduce the market price of our common stock and dilute their stock holdings in us.

Our failure to meet the continued listing requirements of The Nasdaq Capital Market could result in a delisting of our common stock.

If we fail to satisfy the continued listing requirements of The Nasdaq Capital Market, such as the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock.

For example, on October 11, 2022, we received a letter from Nasdaq Listing Qualifications notifying us that for the last 30 consecutive business days, the Company's Minimum Value of Listed Securities, as defined by Nasdaq ("MVLS"), has been below the minimum \$35 million requirement for continued listing on The Nasdaq Capital Market under Nasdaq Listing Rule 5500(b)(2) (the "Minimum Market Value Requirement"). Under Nasdaq Listing Rule 5810(c)(3)(C), the Company was given 180 calendar days, or until April 10, 2023, to regain compliance with the Minimum Market Value Requirement.

On April 11, 2023, we received a determination letter from Nasdaq Listing Qualifications stating that the Company has not regained compliance with Listing Rule 5550(b)(2), requiring the Company to maintain a MVLS of a minimum of \$35 million, during the 180-day grace period previously granted to the Company. As a result of not regaining compliance with the MVLS requirement during the 180-day period, the Company's common stock is subject to delisting from the Nasdaq Capital Market. Pursuant to the Letter, unless the Company timely requests a hearing to appeal the Staff's determination, trading of the Company's

Common Stock would be suspended at the opening of business on April 20, 2023, and a Form 25-NSE would be filed with the Securities and Exchange Commission, which would remove the Company's Common Stock from listing and registration on Nasdaq. On August 3, 2023, we announced that the Nasdaq Hearings Panel determined to extend the previously granted extension from July 30, 2023 until October 9, 2023 (the "Extension") to regain compliance with Nasdaq Listing Rule 5550(b)(2). The Extension is conditioned upon achievement of certain milestones included in a plan of compliance which the Company previously submitted to the Hearings Panel. There can be no assurance that we will be able to achieve these milestones or otherwise be able to maintain our continued listing on the Nasdaq Capital Market.

The delisting of our common stock from Nasdaq may make it more difficult for us to raise capital on favorable terms in the future. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. Further, if we were to be delisted from Nasdaq, our common stock would cease to be recognized as covered securities and we would be subject to regulation in each state in which we offer our securities. Moreover, there is no assurance that any actions that we take to restore our compliance with the Minimum Market Value Requirement required for continued listing or prevent future non-compliance with Nasdaq's listing requirements. There is also no assurance that we will maintain compliance with the other listing requirements of The Nasdaq Capital Market.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The information in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering contain forward-looking statements and information within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the "safe harbor" created by those sections. These forward-looking statements include, but are not limited to, statements concerning our strategy, our beliefs regarding lysins, future operations, future financial position, the sufficiency of our cash and cash equivalence and marketable securities, future revenues, our ability to continue as a going concern, projected costs, prospects and plans and objectives of management. The words "anticipates", "believes", "estimates", "expects", "intends", "targets", "may", "plans", "projects", "potential", "will", "would", "could" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. All such forward-looking statements involve significant risks and uncertainties, including, but not limited to, statements regarding:

- our ability to obtain the capital necessary to fund our operations and continue as a going concern;
- our strategy, future results of operations and financial position;
- future revenues, projected costs, prospects, plans and objectives of management;
- the timing and expectations surrounding regulatory communications;
- our ability to meet the continued listing requirements of The Nasdaq Capital Market;
- our relationship with third-parties;
- the potential, safety, efficacy, and regulatory and clinical progress of our product candidates, prospective products, product approvals, as well as research and development costs; and
- our intended use of proceeds from this offering.

As more fully described under the heading "Risk Factors" and elsewhere in this prospectus supplement and under "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023, which are incorporated by reference into this prospectus supplement, many important factors affect our ability to achieve our stated objectives and to develop and commercialize any product candidates. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. These forward-looking statements involve risks and uncertainties that could cause our actual results to differ materially from those in the forward-looking statements, including, without limitation, the risks and uncertainties set forth in our filings with the SEC. You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein and any free writing prospectuses that we have authorized for use in this offering with the understanding that our actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make. The forwardlooking statements are applicable only as of the date on which they are made, and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

USE OF PROCEEDS

We estimate that the net proceeds to us from this offering, after deducting Placement Agent fees and estimated offering expenses payable by us, will be approximately \$1.7 million, assuming the exercise in full of the Pre-Funded Warrant and not including any funds we may receive as a result of the exercise of the Private Warrant.

We intend to use the net proceeds of this offering to advance ELX-02, being developed for the treatment of Alport syndrome with nonsense mutations and other rare proteinuric kidney diseases, progress the development of ZKN-013, fund discovery efforts for the company's TURBO-ZM platform and for working capital and other general corporate purposes. We believe that our cash, cash equivalents and marketable securities, together with the net proceeds from this offering, will fund our operations into the fourth quarter of 2023. We have based this estimate on assumptions that may prove to be incorrect, and we could utilize our available capital resources sooner than we currently expect.

The amounts and timing of our actual expenditures will depend on numerous factors, including the progress of regulatory review of our product candidates, the status of and results from clinical trials, as well as any acquisition or licensing of additional technologies, other assets or businesses that we may opportunistically identify or any other strategic investments or opportunities that we may pursue, any unforeseen cash needs, and other factors described under "Risk Factors" in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending the use of the net proceeds described above, we plan to invest the net proceeds from this offering in a variety of capital preservation investments, including short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and our ability to pay cash dividends is currently prohibited by the terms of our debt financing arrangements. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future financing instruments.

DILUTION

If you invest in this offering, your ownership interest will be immediately diluted to the extent of the difference between the offering price per share of common stock and/or per underlying share of the Pre-Funded Warrant and the as adjusted net tangible book value per share after giving effect to this offering.

The below discussion and table are based on our capitalization as of June 30, 2023, but assume the exercise in full of the Pre-Funded Warrant offered herein. The below discussion and table exclude:

- 380,590 shares of common stock issuable upon the exercise of the Private Warrant being issued in a concurrent private placement transaction, which have an initial exercise price equal to the offering price per share of common stock being sold in this offering;
- 425,022 shares of our common stock issuable upon the exercise of stock options outstanding as of June 30, 2023 at a weighted average exercise price of \$62.83 per share;
- 1,021 shares of our common stock issuable upon the exercise of warrants outstanding as of June 30, 2023 at a weighted average exercise price of \$440.80 per share;
- 22,835 shares of our common stock issuable upon the exercise of warrants issued to the designees of the Placement Agent as compensation in connection with this offering, at an exercise price of \$6.5688 per share;
- 75,000 shares of our common stock issuable upon the vesting of restricted stock units; and
- an additional 70,134 shares of our common stock that are available for future issuance under our 2018 Equity Incentive Plan as of June 30, 2023, as well as shares that become available pursuant to provisions in 2018 Equity Incentive Plan that automatically increase the share reserve under 2018 Equity Incentive Plan on January 1 of each calendar year.

As of June 30, 2023, we had a net tangible book value of \$(18.6) million, or \$(7.46) per share of common stock. Our net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of common stock outstanding at June 30, 2023, after giving effect to the assumptions set forth above.

After giving effect to the issuance and sale by us of (i) 305,590 shares of common stock at an offering price of \$5.255 per share in this offering, and (ii) Pre-Funded Warrants to purchase 75,000 shares of our common stock at an offering price of \$5.255 per share (which equals the \$5.254 per underlying share purchase price, plus the \$0.001 per underlying share exercise price), less the Placement Agent fees and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2023 would have been approximately \$(16.9) million, or approximately \$(5.89) per share. This amount represents an immediate increase in net tangible book value of \$1.57 per share to our existing stockholders and an immediate dilution in as adjusted net tangible book value of approximately \$11.14 per share to new investors purchasing shares of common stock in this offering.

All calculations of dilution in this prospectus supplement assume the sale of all of the shares and Pre-Funded Warrants offered in this offering. The following table illustrates this dilution on a per share basis:

Offering price per share of common stock		\$5.255
Net tangible book value per share as of June 30, 2023	\$(7.46)	
Increase in net tangible book value per share attributable to new investors purchasing shares and Pre-Funded Warrants in this offering	1.57	
As adjusted net tangible book value per share after this offering		(5.89)
Dilution per share to new investors participating in this offering		\$11.14

To the extent any of these outstanding options or warrants are exercised at a price less than the offering price, there may be further dilution to purchasers of our common stock in this offering.

The information above assumes no exercise of Private Warrant.

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

We are offering through this prospectus supplement and the accompanying prospectus (i) 305,590 shares of our common stock, and (ii) Pre-Funded Warrants to purchase up to 75,000 shares of our common stock. We are also registering the shares of our common stock issuable from time to time upon exercise of the Pre-Funded Warrants offered hereby.

Common Stock

The material terms and provisions of our common stock and each other class of our securities that qualifies or limits our common stock are described under the caption "Description of Capital Stock" starting on page 7 of the accompanying prospectus.

Pre-Funded Warrant

The following summary of certain terms and provisions of Pre-Funded Warrant that is 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 will be filed with the SEC as an exhibit to a Report on Form 8-K in connection with this offering and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form 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 Warrant.

Duration and Exercise Price

The Pre-Funded Warrant offered hereby will have an initial exercise price of \$0.001 per share. The Pre-Funded Warrant will be immediately exercisable and may be exercised at any time until the Pre-Funded Warrant is 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 stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

Exercisability

The Pre-Funded Warrant 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 beneficially own more than 9.99% of the outstanding common stock immediately after exercise (the "Beneficial Ownership Limitation"), except that upon at least 61 days' prior notice from the holder to us, the holder may increase the Beneficial Ownership Limitation, provided that the Beneficial Ownership Limitation in no event exceeds 9.99%.

No fractional shares of common stock will be issued in connection with the exercise of a Pre-Funded Warrant. In lieu of fractional shares, we will pay the holder either an amount in cash equal to the fractional amount multiplied by the exercise price or round such fractional share to a whole share.

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, in its sole discretion, 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 Pre-Funded Warrant.

Fundamental Transaction

In the event of a fundamental transaction, as described in the Pre-Funded Warrant and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into

another person, the acquisition of more than 50% of our outstanding voting securities, the holders of the Pre-Funded Warrant will be entitled to receive upon exercise of the Pre-Funded Warrant the kind and amount of securities, cash or other property that the holders would have received had they exercised the Pre-Funded Warrants immediately prior to such fundamental transaction.

Transferability

Subject to applicable laws, a Pre-Funded Warrant may be transferred at the option of the holder upon surrender of the Pre-Funded Warrant to us together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the Pre-Funded Warrant on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the Pre-Funded Warrant or by virtue of such holder's ownership of common stock, the holders of the Pre-Funded Warrant do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise the Pre-Funded Warrant.

PRIVATE PLACEMENT TRANSACTION

Concurrently with the sale of common stock and pre-funded warrants in this offering, we will issue to the investor in this offering, a private placement warrant, or Private Warrant, to purchase up to an aggregate of 380,590 shares of common stock at an exercise price equal to \$5.13 per share (subject to standard adjustments for stock splits, stock dividend, rights offerings and pro rata distributions). The Private Warrant is being sold together with the shares of common stock and Pre-Funded Warrant being sold in this offering, and we will receive additional proceeds from the Private Warrant to the extent such Private Warrant is exercised for cash.

The Private Warrant and the common stock issuable upon the exercise of such Private Warrant are not being registered under the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying prospectus and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and/or Rule 506(b) promulgated thereunder. Accordingly, the purchaser may only sell common stock issued upon exercise of the Private Warrant pursuant to an effective registration statement under the Securities Act covering the resale of those shares, an exemption under Rule 144 under the Securities Act or another applicable exemption under the Securities Act.

The summary below is not complete and is subject to, and qualified in its entirety by, the provisions of the Private Warrant, which will be filed with the SEC as an exhibit to a Current Report on Form 8-K in connection with the concurrent private placement and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form a part. Prospective investors should carefully review the terms and provisions of the form of Private Warrant for a complete description of the terms and conditions of the Private Warrant.

Duration, Exercise Price and Anti-Dilutive Rights

The Private Warrant has an exercise price of \$5.13 per share and will be immediately exercisable upon issuance. The Private Warrant will expire five and one-half years following the issuance of the Private Warrant. The Private Warrant contains standard adjustments to the exercise price including for stock splits, stock dividend, rights offerings and pro rata distributions.

Exercisability

The Private Warrant will be immediately exercisable, at the option of each holder and until the expiration date, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of purchased upon such exercise (except in the case of a cashless exercise as discussed below).

Exercise Limitation

A holder (together with its affiliates) may not exercise any portion of the Private Warrant to the extent that the holder would beneficially own more than 4.99% of the outstanding common stock immediately after exercise (the "Beneficial Ownership Limitation"), except that upon at least 61 days' prior notice from the holder to us, the holder may increase the Beneficial Ownership Limitation, provided that the Beneficial Ownership Limitation in no event exceeds 9.99%. No fractional shares of common stock will be issued in connection with the exercise of a Private Warrant. In lieu of fractional shares, we will pay the holder either an amount in cash equal to the fractional amount multiplied by the exercise price or round such fractional share to a whole share.

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, in the event the shares underlying the Private Warrant, or the Private Warrant Shares, are not registered under the Securities Act, 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 Private Warrant.

Fundamental Transaction

In the event of a fundamental transaction, as described in the Private Warrant and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding voting securities, the holders of the Private Warrant will be entitled to receive upon exercise of the Private Warrant the kind and amount of securities, cash or other property that the holders would have received had they exercised the Private Warrant immediately prior to such fundamental transaction. In addition, the holders of the Private Warrant have, at the option of the applicable holder, the right to receive from us or a successor entity the same type or form of consideration (and in the same proportion) that is being offered and paid to the holders of our common stock in the fundamental transaction in the amount of the Black Scholes value (as described in the Private Warrant) of the unexercised portion of the Private Warrant on the date of the consummation of the fundamental transaction.

Transferability

Subject to applicable laws, a Private Warrant may be transferred at the option of the holder upon surrender of the Private Warrant to us together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the Private Warrants on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the Private Warrant or by virtue of such holder's ownership of common stock, the holders of the Private Warrant do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise the Private Warrant.

PLAN OF DISTRIBUTION

We engaged H.C. Wainwright & Co., LLC, Wainwright, or the Placement Agent, to act as our exclusive placement agent in connection with this offering. The placement agent is not purchasing or selling any securities offered by us in this offering, nor is it required to arrange for the purchase and sale of any specific number or dollar amount of such securities, other than to use its "reasonable best efforts" to arrange for the sale of such securities by us. Therefore, we may not sell all of securities being offered. The terms of this offering were 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. We have entered into a securities purchase agreement directly with an accredited and institutional investor who has agreed to purchase securities in this offering. We will only sell securities in this offering to investors who have entered into securities purchase agreements.

Delivery of the securities offered hereby is expected to take place on or about September 20, 2023, subject to satisfaction of certain closing conditions.

We have agreed to pay the Placement Agent (i) a cash fee equal to 7.5% of the aggregate gross proceeds of this offering, (ii) a non-accountable expense allowance of \$50,000, and (iii) \$15,950 for the clearing fees.

We have also agreed to pay the Placement Agent a tail fee equal to the cash and warrant compensation in this offering if any investor who had been contacted by Placement Agent in connection with this offering during the term of our engagement of Placement Agent, provides us with capital in any offering during the 12-month period following expiration or termination of our engagement of Placement Agent, subject to certain exceptions.

We estimate the total expenses of this offering paid or payable by us will be approximately \$150,000. After deducting the fees due to the Placement Agent and our estimated expenses in connection with this offering, we expect the net proceeds from this offering will be approximately \$1.7 million.

Subsequent Equity Sales

Under the terms of the securities purchase agreements, from the date of such agreements until 45 days after the closing of this offering, neither we nor any subsidiary shall (i) issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of common stock or common stock equivalents, or (ii) file any registration statement or prospectus, or any amendment or supplement thereto, subject to certain exceptions.

We have also agreed under the terms of the securities purchase agreements, until one year after the closing of this offering, not to (i) issue or sell any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive, additional shares of common stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon, and/or varies with, the trading prices of or quotations for the shares of common stock at any time after the initial issuance of such debt or equity securities or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to our business or the market for our common stock or (ii) enter into, or effect a transaction under, any agreement, including, but not limited to, an equity line of credit, subject to certain exceptions.

Placement Agent Warrants

In addition, we have agreed to issue to the Placement Agent, or its designees, at the closing of this offering, warrants to purchase 6.0% of the number of shares of our common stock (and shares of common stock underlying the Pre-Funded Warrants) sold in this offering (or warrants to purchase up to 22,835 shares of our common stock). Such warrants will have substantially the same terms as the Private Warrants being sold and issued in the private placement, except that the Placement Agent's warrants will have a term of exercise equal to five years from the commencement of the sales pursuant to this offering and will have an exercise price equal to 125% of the offering price per share (or \$6.5688 per share). Neither the Placement Agent's warrants nor the shares of our common stock issuable upon exercise thereof are being registered hereby.

Indemnification

We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act and liabilities arising from breaches of representations and warranties contained in our engagement letter with the placement agent. We have also agreed to contribute to payments the placement agent may be required to make in respect of such liabilities.

Right of First Refusal

We have also granted the Placement Agent, subject to certain exceptions, a right of first refusal for a period of 12 months following the closing of this offering to act as sole book-running manager, sole underwriter or sole placement agent for each and every future debt financing or refinancing and public or private equity offering by us or any of our subsidiaries.

Other Relationships

From time to time, the Placement Agent may provide in the future various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions. However, except as disclosed in this prospectus supplement, we have no present arrangements with the Placement Agent for any further services.

Regulation M Compliance

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 shares of common stock offered hereby by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. 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.

Trading Market

Our shares of common stock are listed on the Nasdaq Capital Market under the symbols "ELOX".

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Latham & Watkins LLP.

EXPERTS

The consolidated financial statements of Eloxx Pharmaceuticals, Inc. as of December 31, 2022 and for the year then ended, incorporated in this prospectus supplement and the accompanying prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by Baker Tilly US, LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing. The report on the consolidated financial statements contains an explanatory paragraph regarding Eloxx Pharmaceuticals, Inc.'s ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is *www.sec.gov*.

Our web site address is *www.eloxxpharma.com*. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus supplement.

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement. Statements in this prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus supplement and the accompanying prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus supplement and the accompanying prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus supplement and the accompanying prospectus to the extent that a statement contained in this prospectus supplement or the accompanying prospectus modifies or replaces that statement.

We incorporate by reference the following information or documents that we have filed with the SEC:

- Our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 31, 2023.
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2022, filed with the SEC on May 12, 2023 and August 11, 2023, respectively.
- Our Current Reports on Form 8-K filed with the SEC on March 9, 2023, April 14, 2023, May 24, 2023, June 7, 2023, June 15, 2023, June 23, 2023, July 13, 2023, August 3, 2023, August 29, 2023, September 7, 2023, September 15, 2023 and September 18, 2023.
- Our annual Proxy Statement on Schedule 14A relating to our annual meeting of stockholders, filed on April 28, 2023 (with respect to those portions incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2022).
- The description of our Common Stock contained in our Registration Statement on Form 8-A, filed with the SEC on April 24, 2018, and any amendment or report filed with the SEC for the purpose of updating the description.

We incorporate by reference into this prospectus supplement and accompanying prospectus all reports and other documents we subsequently file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, between the date of this prospectus supplement and the termination of the offering of the securities described in this prospectus supplement. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed "filed" with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K. The reports and documents specifically listed above or filed in the future (excluding any information furnished to, rather than

filed with, the SEC) are deemed to be part of this prospectus supplement and accompanying prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus supplement and the accompanying prospectus (other than exhibits, unless they are specifically incorporated by reference in the documents) by writing or telephoning us at the following address:

Eloxx Pharmaceuticals, Inc. 480 Arsenal Way, Suite 130 Watertown, MA 02451 (781) 577-5300

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus supplement and the accompanying prospectus.

PROSPECTUS



ELOXX PHARMACEUTICALS, INC.

\$200,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants
Units

We may offer and sell up to \$200,000,000 in the aggregate of the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The prospectus supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "RISK FACTORS" ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Capital Market under the symbol "ELOX." On August 19, 2021, the last reported sale price of our common stock on the Nasdaq Capital Market was \$1.34 per share.

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

The date of this prospectus is August 30, 2021.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	<u>1</u>
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	<u>2</u>
THE COMPANY	<u>4</u>
RISK FACTORS	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>6</u>
DESCRIPTION OF CAPITAL STOCK	<u>7</u>
DESCRIPTION OF DEBT SECURITIES	<u>10</u>
DESCRIPTION OF WARRANTS	<u>17</u>
GLOBAL SECURITIES	<u>20</u>
PLAN OF DISTRIBUTION	<u>24</u>
<u>LEGAL MATTERS</u>	<u>26</u>
EXPERTS	<u>26</u>

ABOUT THIS PROSPECTUS

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

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading "Risk Factors" contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to "Eloxx," "we," "our," "us" and the "Company" in this prospectus, we mean Eloxx Pharmaceuticals, Inc. and its consolidated subsidiaries, unless otherwise specified. When we refer to "you," we mean the potential holders of the applicable series of securities.

We have proprietary rights to trademarks, trade names and service marks appearing in this prospectus that are important to our business. Solely for convenience, the trademarks, trade names and service marks may appear in this prospectus without the ® and TM symbols, but any such references are not intended to indicate, in any way, that we forgo or will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensors to these trademarks, trade names and service marks. All trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. We do not intend our use or display of other parties' trademarks, trade names or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is http://www.sec.gov.

Our web site address is *www.eloxxpharma.com*. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC (other than those documents or the portions of those documents not deemed to be filed):

- Our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 12, 2021.
- The information specifically incorporated by reference into our Annual Report on <u>Form 10-K from</u> our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 1, 2021.
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2021 and June 30, 2021, filed with the SEC on May 7, 2021 and August 16, 2021.
- Our Current Reports on Form 8-K and Form 8-K/A filed with the SEC on <u>January 13, 2021</u>, <u>March 12, 2021</u>, <u>March 26, 2021</u>, <u>April 1, 2021</u> (except for Item 7.01 of such report, which shall not be deemed incorporated by reference herein), <u>April 29, 2021</u>, <u>May 18, 2021</u>, <u>May 18, 2021</u>, <u>May 18, 2021</u>, <u>May 20, 2021</u>, <u>May 27, 2021</u>, <u>June 16, 2021</u>, <u>July 6, 2021</u> (except for Item 7.01 of such report, which shall not be deemed incorporated by reference herein) <u>July 16, 2021</u> and <u>August 20, 2021</u>.
- The description of our common stock contained in our <u>Registration Statement on Form 8-A, filed on April 24, 2018</u>, including any amendments or reports filed for purposes of updating this description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act" in this prospectus, prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

Eloxx Pharmaceuticals, Inc. 480 Arsenal Way Watertown, Massachusetts 02472 (781) 577-5300

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

THE COMPANY

We are a clinical-stage biopharmaceutical company engaged in the science of ribosome modulation, leveraging both our innovative TURBO-ZMchemistry technology platform in an effort to develop novel Ribosome Modulating Agents (RMAs) and our library of Eukaryotic Ribosome Selective Glycosides (ERSGs), for the treatment of rare and ultra-rare premature stop codon diseases. Premature stop codons are point mutations that disrupt the stability of the impacted messenger RNA (mRNA) and the protein synthesis from that mRNA.

On April 1, 2021, we acquired Zikani Therapeutics, Inc. ("Zikani"), a company in preclinical development and engaged in the science of ribosome modulation, leveraging its innovative TURBO-ZM chemistry technology platform to develop novel RMAs as potential therapeutics for people with limited treatment options. The TURBO-ZM platform is designed to enable rapid synthesis of novel compounds that can be optimized to modulate the ribosome in a disease specific manner. The TURRBO-ZM synthetic chemistry platform can design oral novel macrolide-based small molecules that are potent oral modulators with favorable therapeutic indices. Macrolides are antibiotics that inhibit protein synthesis in bacteria. We expect the combined company to emerge as a leader in the science of ribosome modulation through our complementary platforms and continued development of our library of RMAs and ERSGs.

ELX-02, is a small molecule drug candidate designed to restore production of full-length functional proteins. The investigational therapy has shown strong activity across a full range of mutations in cystic fibrosis (CF) preclinical models. In Phase 1 testing, ELX-02 was generally well tolerated and demonstrated high bioavailability with consistent pharmacokinetics across both single and multiple-dose studies. The Phase 2 trials are designed to validate the safety of ELX-02 and assess its biological activity.

ELX-02 is currently in Phase 2 clinical development for the treatment of CF in patients with diagnosed nonsense mutations and is being conducted at leading investigator sites in Europe, Israel and the United States. As of the end of June 2021, we believe that we have enrolled a sufficient number of patients to assess biological activity of ELX-02. We will continue to enroll additional patients to support Phase 3 clinical trial planning. We expect to present data from the first four treatment arms of the study in the fourth quarter of 2021. The Cystic Fibrosis Foundation ("CF Foundation") is providing funding for a portion of this global clinical trial program. The FDA has granted orphan drug designation to ELX-02 for the treatment of nephropathic cystinosis, MPS I, Rett syndrome, and CF.

With the strength of our ELX-02 program for CF, the acquisition of Zikani provides us with the opportunity to amplify the potential of our innovative science by developing a new class of therapies to treat diseases with limited to no treatment options. The CF Foundation has agreed to provide funding for a portion of this research. Our preclinical programs are focused on select rare diseases including inherited diseases, cancer caused by nonsense mutations, kidney diseases, including autosomal dominant polycystic kidney disease, as well as rare ocular genetic disorders. In addition, we plan to file an IND in 2022 for what could potentially become the first oral therapy for protein restoration for patients with nonsense mutations in Recessive Dystrophic Epidermolysis Bullosa (RDEB) and Junctional Epidermolysis Bullosa (JEB). RDEB is an incurable, extremely painful and often fatal skin blistering condition caused by a lack of collagen type VII that is estimated to affect more than 3,000 people worldwide. JEB is the most severe form of EB, with most patients dying in infancy. By extending the application of ribosomal RNA modulation to the readthrough of nonsense mutations in tumor suppressor genes, we are also rapidly advancing preclinical research for familial adenomatous polyposis (FAP), an inherited pre-cancerous colorectal disease frequently caused by nonsense mutations in the adenomatous polyposis coli (APC) gene. We plan to target rare diseases including genetic diseases and cancers caused by nonsense mutations.

Nonsense mutations cause approximately 10-12 percent of rare inherited diseases. ELX-02 along with the TURBO-ZM library of compounds are anticipated to significantly expand to include the potential treatment of many other rare diseases and certain cancers.

We were incorporated under the laws of the State of Delaware. Our principal executive offices are located at 480 Arsenal Way, Watertown, Massachusetts 02472, and our telephone number is (781) 577-5300. Our website address is www.eloxxpharma.com. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our securities. Our common stock is listed on the Nasdaq Global Market under the symbol "ELOX".

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, our certificate of incorporation authorizes us to issue up to 500,000,000 shares of common stock, \$0.01 par value per share, and 5,000,000 shares of preferred stock, \$0.01 par value per share. The following summary describes the material terms and provisions affecting the rights of holders of our capital stock, which is qualified in its entirety by reference to our certificate of incorporation and our bylaws, in each case as amended.

As of June 30, 2021, there were 86,201,767 shares of common stock outstanding, no shares of preferred stock outstanding, and warrants to purchase 323,892 shares of common stock, options to purchase 7,655,008 shares of common stock, and restricted stock units for 634,892 shares of common stock were outstanding.

Common Stock

Our common stock is listed on the Nasdaq Capital Market under the symbol "ELOX."

Voting rights. Each holder of our common stock is entitled to one vote for each share of common stock on all matters submitted to a vote of the stockholders, including the election of directors.

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

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

Rights and Preferences. Holders of our common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate in the future. All outstanding shares of common stock are fully paid and nonassessable, and the shares of common stock to be issued under this prospectus, when they are paid for, will be fully paid and nonassessable.

Transfer Agent

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Dividend

Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock. We have never declared or paid any cash dividends on our common stock. We do not intend to pay cash dividends for the foreseeable future. We currently expect to retain all future earnings, if any, for use in the development, operation and expansion of our business. Any determination to pay cash dividends in the future will depend upon, among other things, our results of operations, plans for expansion, tax considerations, available net profits and reserves, limitations under law, financial condition, capital requirements and other factors that our board of directors considers to be relevant.

Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the

likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change of control of our company or other corporate action.

Our board of directors will fix the designations, voting powers, preferences and rights of the preferred stock of each series we issue under this prospectus, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that contains the terms of the series of preferred stock we are offering. We will describe in the applicable prospectus supplement the terms of the series of preferred stock being offered, including, to the extent applicable:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if applicable;
- the provisions for a sinking fund, if applicable;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- · any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock or other equity securities, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the
 exchange price, or how it will be calculated, and the exchange period;
- · voting rights, if any;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of material or special U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The laws of the state of Delaware, the state of our incorporation, provide that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of such preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

If we issue and sell shares of preferred stock pursuant to this prospectus, the shares will be fully paid and nonassessable and will not have, or be subject to, any preemptive or similar rights. The issuance of

preferred stock could adversely affect the voting power, conversion or other rights of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation. Preferred stock could be issued quickly with terms designed to delay, deter or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a publiclyheld Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination
 or the transaction that resulted in the stockholder becoming an interested holder;
- upon completion 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 began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 50% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- 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;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

DESCRIPTION OF DEBT SECURITIES

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

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

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

As used in this section only, "Eloxx," "we," "our" or "us" refer to Eloxx Pharmaceuticals. Inc., excluding our subsidiaries, unless expressly stated or the context otherwise requires.

General

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

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

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

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

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

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

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

Transfer and Exchange

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

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

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

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depositary, and registered in the name of the Depositary or a nominee of the Depositary. Please see "Global Securities."

Covenants

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

No Protection in the Event of a Change of Control

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

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a "successor person") unless:

- we are the surviving corporation or the successor person (if other than Eloxx) is a corporation
 organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly
 assumes our obligations on the debt securities and under the indenture; and
- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

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

Events of Default

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

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other
 than a covenant or warranty that has been included in the indenture solely for the benefit of a series
 of debt securities other than that series), which default continues uncured for a period of 90 days
 after we receive written notice from the trustee or Eloxx and the trustee receive written notice from
 the holders of not less than 25% in principal amount of the outstanding debt securities of that series
 as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of Eloxx;
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

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

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

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

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

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

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days. Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

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

Modification and Waiver

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

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading "Consolidation, Merger and Sale of Assets";
- to provide for uncertificated securities in addition to or in place of certificated securities;
- · to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or events of default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depositary;
- to make any change that does not adversely affect the rights of any holder of debt securities;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act.

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

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

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

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

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

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

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

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

The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt
 securities denominated in a single currency other than U.S. Dollars, government obligations of the
 government that issued or caused to be issued such currency, that, through the payment of interest
 and principal in accordance with their terms, will provide money in an amount sufficient in the
 opinion of a nationally recognized firm of independent public accountants or investment bank to pay
 and discharge each installment of principal of, premium and interest on and any mandatory sinking
 fund payments in respect of the debt securities of that series on the stated maturity of those payments
 in accordance with the terms of the indenture and those debt securities; and
- delivering to the trustee an opinion of counsel to the effect that the holders of the debt securities of
 that series will not recognize income, gain or loss for United States federal income tax purposes as a
 result of the deposit and related covenant defeasance and will be subject to United States federal
 income tax on the same amounts and in the same manner and at the same times as would have been
 the case if the deposit and related covenant defeasance had not occurred.

No Personal Liability of Directors, Officers, Employees or Securityholders

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

Governing Law

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

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

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

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following summary of material provisions of the warrants and warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants
 to purchase such shares and the price at which such number of shares may be purchased upon such
 exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- United States Federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent or receive dividends;
- receive notice as shareholders with respect to any meeting of shareholders for the election of our directors or any other matter; or
- exercise any rights as shareholders of Eloxx.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants

will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

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

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depositary, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depositary to its nominee or by the nominee to the depositary, or by the depositary or its nominee to a successor depositary or to a nominee of the successor depositary.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a "banking organization" within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a "clearing corporation" within the meaning of the New York Uniform Commercial Code; and
- a "clearing agency" registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants' accounts, thereby eliminating the need for physical movement of securities certificates. "Direct participants" in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC's records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants' records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC's records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depositary with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depositary is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

• DTC notifies us that it is unwilling or unable to continue as a depositary for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depositary is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;

- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- · an Event of Default has occurred and is continuing with respect to such series of securities,

we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depositary directs. It is expected that these directions will be based upon directions received by the depositary from its participants with respect to ownership of beneficial interests in the global securities.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositaries, which in turn will hold such interests in customers' securities accounts in such depositaries' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositaries; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depositary to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositaries.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

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

Each time that we sell securities covered by this prospectus, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us, if applicable.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the Nasdaq Global Market, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of the Company. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements, incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

305,590 Shares of Common Stock

Pre-Funded Warrants to Purchase up to 75,000 Shares of Common Stock

Up to 75,000 Shares of Common Stock Underlying the Pre-Funded Warrants



Prospectus Supplement

H.C. Wainwright & Co.

September 18, 2023