

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2024

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 001-37937

XENETIC BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Nevada
(State or other jurisdiction of
incorporation or organization)

45-2952962
(IRS Employer
Identification No.)

945 Concord Street
Framingham, Massachusetts 01701
(Address of principal executive offices and zip code)

781-778-7720
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 par value per share	XBIO	The Nasdaq Stock Market

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

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

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

As of August 9, 2024, the number of outstanding shares of the registrant's common stock was 1,542,139.

XENETIC BIOSCIENCES, INC.
FORM 10-Q
QUARTERLY PERIOD ENDED JUNE 30, 2024

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PART I – FINANCIAL INFORMATION

ITEM 1 – FINANCIAL STATEMENTS

**XENETIC BIOSCIENCES, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS**

	<u>June 30, 2024</u>	<u>December 31, 2023</u>
	<u>(Unaudited)</u>	
ASSETS		
Current assets:		
Cash	\$ 7,298,597	\$ 8,983,046
Prepaid expenses, receivables and other	716,381	603,828
Total current assets	<u>8,014,978</u>	<u>9,586,874</u>
Other assets	1,018,352	1,018,352
Total assets	<u>\$ 9,033,330</u>	<u>\$ 10,605,226</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 283,586	\$ 240,832
Accrued expenses and other current liabilities	1,304,016	568,753
Total current liabilities	<u>1,587,602</u>	<u>809,585</u>
Total liabilities	<u>1,587,602</u>	<u>809,585</u>
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, 10,000,000 shares authorized		
Series B, \$0.001 par value: 1,804,394 shares issued and outstanding as of June 30, 2024 and December 31, 2023	1,804	1,804
Common stock, \$0.001 par value; 10,000,000 shares authorized as of June 30, 2024 and December 31, 2023; 1,543,802 and 1,543,385 shares issued as of June 30, 2024 and December 31, 2023, respectively; 1,541,101 and 1,540,684 shares outstanding as of June 30, 2024 and December 31, 2023, respectively	1,544	1,544
Additional paid in capital	208,173,105	208,053,935
Accumulated deficit	(195,703,279)	(193,234,196)
Accumulated other comprehensive income	253,734	253,734
Treasury stock	<u>(5,281,180)</u>	<u>(5,281,180)</u>
Total stockholders' equity	<u>7,445,728</u>	<u>9,795,641</u>
Total liabilities and stockholders' equity	<u>\$ 9,033,330</u>	<u>\$ 10,605,226</u>

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

XENETIC BIOSCIENCES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	THREE MONTHS ENDED		SIX MONTHS ENDED	
	JUNE 30,		JUNE 30,	
	2024	2023	2024	2023
Revenue:				
Royalty revenue	\$ 726,404	\$ 651,005	\$ 1,237,221	\$ 1,256,849
Total revenue	<u>726,404</u>	<u>651,005</u>	<u>1,237,221</u>	<u>1,256,849</u>
Operating costs and expenses:				
Research and development	(933,771)	(903,243)	(1,878,092)	(1,498,519)
General and administrative	(1,130,029)	(945,950)	(1,964,939)	(1,871,693)
Total operating costs and expenses	<u>(2,063,800)</u>	<u>(1,849,193)</u>	<u>(3,843,031)</u>	<u>(3,370,212)</u>
Loss from operations	<u>(1,337,396)</u>	<u>(1,198,188)</u>	<u>(2,605,810)</u>	<u>(2,113,363)</u>
Other income (expense):				
Other (expense) income	(21)	21,122	31	25,642
Interest income, net	63,447	126,103	136,696	180,204
Total other income	<u>63,426</u>	<u>147,225</u>	<u>136,727</u>	<u>205,846</u>
Net loss	<u>\$ (1,273,970)</u>	<u>\$ (1,050,963)</u>	<u>\$ (2,469,083)</u>	<u>\$ (1,907,517)</u>
Basic and diluted net loss per share	<u>\$ (0.83)</u>	<u>\$ (0.69)</u>	<u>\$ (1.60)</u>	<u>\$ (1.25)</u>
Weighted-average shares of common stock outstanding, basic and diluted	<u>1,540,799</u>	<u>1,524,717</u>	<u>1,540,741</u>	<u>1,520,710</u>

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

XENETIC BIOSCIENCES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(Unaudited)

THREE MONTHS ENDED JUNE 30, 2024

	<u>Preferred Stock</u>		<u>Common Stock</u>		<u>Additional Paid in Capital</u>	<u>Accumulated Deficit</u>	<u>Accumulated Other Comprehensive Income</u>	<u>Treasury Stock</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>					
Balance as of April 1, 2024	1,804,394	\$ 1,804	1,543,385	\$ 1,544	\$ 208,131,009	\$ (194,429,309)	\$ 253,734	\$ (5,281,180)	\$ 8,677,602
Issuance of common stock in connection with restricted stock	-	-	417	-	-	-	-	-	-
Share-based expense	-	-	-	-	42,096	-	-	-	42,096
Net loss	-	-	-	-	-	(1,273,970)	-	-	(1,273,970)
Balance as of June 30, 2024	<u>1,804,394</u>	<u>\$ 1,804</u>	<u>1,543,802</u>	<u>\$ 1,544</u>	<u>\$ 208,173,105</u>	<u>\$ (195,703,279)</u>	<u>\$ 253,734</u>	<u>\$ (5,281,180)</u>	<u>\$ 7,445,728</u>

SIX MONTHS ENDED JUNE 30, 2024

	<u>Preferred Stock</u>		<u>Common Stock</u>		<u>Additional Paid in Capital</u>	<u>Accumulated Deficit</u>	<u>Accumulated Other Comprehensive Income</u>	<u>Treasury Stock</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>					
Balance as of January 1, 2024	1,804,394	\$ 1,804	1,543,385	\$ 1,544	\$ 208,053,935	\$ (193,234,196)	\$ 253,734	\$ (5,281,180)	\$ 9,795,641
Issuance of common stock in connection with restricted stock	-	-	417	-	-	-	-	-	-
Share-based expense	-	-	-	-	119,170	-	-	-	119,170
Net loss	-	-	-	-	-	(2,469,083)	-	-	(2,469,083)
Balance as of June 30, 2024	<u>1,804,394</u>	<u>\$ 1,804</u>	<u>1,543,802</u>	<u>\$ 1,544</u>	<u>\$ 208,173,105</u>	<u>\$ (195,703,279)</u>	<u>\$ 253,734</u>	<u>\$ (5,281,180)</u>	<u>\$ 7,445,728</u>

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

XENETIC BIOSCIENCES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(Unaudited)

THREE MONTHS ENDED JUNE 30, 2023

	<u>Preferred Stock</u>		<u>Common Stock</u>			<u>Accumulated Deficit</u>	<u>Accumulated Other Comprehensive Income</u>	<u>Treasury Stock</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Additional Paid in Capital</u>				
Balance as of April 1, 2023	2,774,394	\$ 2,774	1,519,360	\$ 1,520	\$ 207,838,756	\$ (189,956,172)	\$ 253,734	\$ (5,281,180)	\$ 12,859,432
Issuance of common stock to adjust for reverse split rounding	-	-	15,941	16	(16)	-	-	-	-
Share-based expense	-	-	-	-	69,389	-	-	-	69,389
Net loss	-	-	-	-	-	(1,050,963)	-	-	(1,050,963)
Balance as of June 30, 2023	<u>2,774,394</u>	<u>\$ 2,774</u>	<u>1,535,301</u>	<u>\$ 1,536</u>	<u>\$ 207,908,129</u>	<u>\$ (191,007,135)</u>	<u>\$ 253,734</u>	<u>\$ (5,281,180)</u>	<u>\$ 11,877,858</u>

SIX MONTHS ENDED JUNE 30, 2023

	<u>Preferred Stock</u>		<u>Common Stock</u>			<u>Accumulated Deficit</u>	<u>Accumulated Other Comprehensive Income</u>	<u>Treasury Stock</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Number of Shares</u>	<u>Par Value (\$0.001)</u>	<u>Additional Paid in Capital</u>				
Balance as of January 1, 2023	2,774,394	\$ 2,774	1,519,360	\$ 1,520	\$ 207,769,904	\$ (189,099,618)	\$ 253,734	\$ (5,281,180)	\$ 13,647,134
Issuance of common stock to adjust for reverse split rounding	-	-	15,941	16	(16)	-	-	-	-
Share-based expense	-	-	-	-	138,241	-	-	-	138,241
Net loss	-	-	-	-	-	(1,907,517)	-	-	(1,907,517)
Balance as of June 30, 2023	<u>2,774,394</u>	<u>\$ 2,774</u>	<u>1,535,301</u>	<u>\$ 1,536</u>	<u>\$ 207,908,129</u>	<u>\$ (191,007,135)</u>	<u>\$ 253,734</u>	<u>\$ (5,281,180)</u>	<u>\$ 11,877,858</u>

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

XENETIC BIOSCIENCES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended June 30,	
	2024	2023
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (2,469,083)	\$ (1,907,517)
Adjustments to reconcile net loss to net cash used in operating activities:		
Share-based expense	119,170	138,241
Changes in operating assets and liabilities:		
Prepaid expenses, receivables and other	(112,553)	(762,941)
Other assets	-	362,500
Accounts payable, accrued expenses and other liabilities	778,017	(201,841)
Net cash used in operating activities	(1,684,449)	(2,371,558)
Net change in cash	(1,684,449)	(2,371,558)
Cash at beginning of period	8,983,046	13,097,265
Cash at end of period	\$ 7,298,597	\$ 10,725,707
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid for interest	\$ -	\$ -

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

XENETIC BIOSCIENCES, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. The Company

Background

Xenetic Biosciences, Inc. (“Xenetic” or the “Company”), incorporated in the state of Nevada and based in Framingham, Massachusetts, is a biopharmaceutical company focused on advancing innovative immune-oncology technologies addressing hard to treat cancers. The Company’s proprietary Deoxyribonuclease (“DNase”) platform is designed to improve outcomes of existing treatments, including immunotherapies, by targeting neutrophil extracellular traps (“NETs”), which have been implicated in cancer progression and resistance to cancer treatments. Xenetic is currently focused on advancing its systemic DNase program into the clinic as an adjunctive therapy for pancreatic carcinoma and locally advanced or metastatic solid tumors. Additionally, Xenetic has partnered with biotechnology and pharmaceutical companies to develop its proprietary drug delivery platform, PolyXen[®], and receives royalty payments under an exclusive license arrangement in the field of blood coagulation disorders.

As used in this Quarterly Report on Form 10-Q (“Quarterly Report”), unless otherwise indicated, all references herein to “Xenetic,” the “Company,” “we” or “us” refer to Xenetic Biosciences, Inc. and its wholly-owned subsidiaries.

The Company, directly or indirectly, through its wholly-owned subsidiaries, Hesperix S.A. (“Hesperix”) and Xenetic Biosciences (U.K.) Limited (“Xenetic UK”), and the wholly-owned subsidiaries of Xenetic UK, Lipoxen Technologies Limited (“Lipoxen”), Xenetic Bioscience, Incorporated and SymbioTec, GmbH (“SymbioTec”), own various United States (“U.S.”) federal trademark registrations and applications along with unregistered trademarks and service marks, including but not limited to XCART[™], OncoHist[™], PolyXen, ErepoXen[™], and ImuXen[™], which may be used throughout this Quarterly Report. All other company and product names may be trademarks of the respective companies with which they are associated.

Going Concern and Management’s Plan

Management evaluates whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company’s ability to continue as a going concern within one year after the date that the financial statements are issued. The Company has incurred substantial losses since its inception and expects to continue to incur operating losses in the near-term. The Company believes that its existing resources will be adequate to fund the Company’s operations for a period of at least twelve months from the date of the issuance of these financial statements. However, the Company anticipates it will need additional capital in the long-term to pursue its business initiatives. While the Company believes it has access to capital resources through possible public or private equity offerings, debt financings, corporate collaborations, related party funding, or other means to continue as a going concern, the terms, timing and extent of any future financing will depend upon several factors, including the achievement of progress in its product development programs, its ability to identify and enter into licensing or other strategic arrangements, its continued listing on the Nasdaq Stock Market (“Nasdaq”), and factors related to financial, economic, geo-political, industry and market conditions, many of which are beyond its control. The capital markets for the biotech industry can be highly volatile, which make the terms, timing and extent of any future financing uncertain.

2. Risks and Uncertainties

Impact of Global Conflicts on Operations

The short and long-term implications of Russia's invasion of Ukraine and conflict in the Middle East are difficult to predict at this time. The imposition of current and future sanctions and counter sanctions may have an adverse effect on the economic markets generally and could impact our business, financial condition, and results of operations.

3. Summary of Significant Accounting Policies

Preparation of Interim Financial Statements

The accompanying condensed consolidated interim financial statements were prepared by the Company pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") and, in the opinion of management, include all normal and recurring adjustments necessary to present fairly the results of the interim periods shown. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles have been condensed or omitted pursuant to such SEC rules and regulations. Management believes that the disclosures made are adequate to make the information presented not misleading. The results for the interim periods are not necessarily indicative of results for the full year. The condensed consolidated financial statements contained herein should be read in conjunction with the consolidated financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2023 filed with the SEC on March 21, 2024, and amended on April 26, 2024.

On May 15, 2023, the Company effected a reduction, on a 1-for-10 basis, in its authorized common stock, par value \$0.001, along with a corresponding and proportional decrease in the number of shares issued and outstanding (the "Reverse Stock Split"). On the effective date of the Reverse Stock Split, (i) every 10 shares of common stock were reduced to one share of common stock, with any fractional amounts rounded up to one share; (ii) the number of shares of common stock into which each outstanding warrant, restricted stock unit ("RSU"), or option to purchase common stock was convertible into was proportionately reduced on the same basis as the common stock; (iii) the exercise price of each outstanding warrant or option to purchase common stock was proportionately increased on a 1-to-10 basis; and (iv) the number of shares of common stock into which each share of preferred stock was convertible into was proportionately reduced on the same basis as the common stock. Unless otherwise indicated, all of the share numbers, share prices, and exercise prices have been adjusted in this Quarterly Report, on a retroactive basis, to reflect this 1-for-10 Reverse Stock Split.

Principles of Consolidation

The condensed consolidated financial statements of the Company include the accounts of Hesperix, Xenetic UK and Xenetic UK's wholly owned subsidiaries: Lipoxen, Xenetic Bioscience, Incorporated, and SymbioTec. Certain of the Company's subsidiaries require guarantees of support from Xenetic. While all intercompany balances and transactions have been eliminated in consolidation, the Company has \$0.2 million of cash collateralizing these guarantees.

Basic and Diluted Net Loss per Share

The Company computes basic net loss per share by dividing net loss applicable to common stockholders by the weighted-average number of shares of the Company's common stock outstanding during the period. The Company computes diluted net loss per share after giving consideration to the dilutive effect of stock options that are outstanding during the period, except where such non-participating securities would be anti-dilutive.

For the three and six months ended June 30, 2024 and 2023, basic and diluted net loss per share are the same in each respective period due to the Company's net loss position. Potentially dilutive, non-participating securities have not been included in the calculations of diluted net loss per share, as their inclusion would be anti-dilutive.

4. Significant Strategic Collaborations

Takeda Pharmaceutical Co. Ltd. (together with its wholly-owned subsidiaries, “Takeda”)

In October 2017, the Company granted to Takeda the right to grant a non-exclusive sublicense to certain patents related to the Company’s PolyXen technology that were previously exclusively licensed to Takeda in connection with products related to the treatment of blood and bleeding disorders. Royalty payments of approximately \$0.7 million and \$1.2 million were recorded as revenue by the Company during the three and six months ended June 30, 2024, respectively, and approximately \$0.7 million and \$1.3 million were recorded as revenue by the Company during the three and six months ended June 30, 2023, respectively. These payments are based on single digit royalties on net sales of certain covered products. The Company’s policy is to recognize royalty payments as revenue when they are reliably measurable, which is upon receipt of reports from Takeda. The Company receives these reports in the quarter subsequent to the actual sublicensee sales. At the time the revenue was received, there were no remaining performance obligations and all other revenue recognition criteria were met.

Belgian Volition SARL Limited (“Volition”) Collaboration

On August 2, 2022, the Company announced a research and development collaboration with Volition to develop NETs-targeted adoptive cell therapies for the treatment of cancer. The collaboration is an early exploratory program to evaluate the potential combination of Volition’s Nu.Q[®] technology Test and the Company’s DNase-Armored CAR T platform to develop proprietary adoptive cell therapies potentially targeting multiple types of solid cancers. Under the terms of the collaboration agreement, Volition will fund a research program and the two parties will share proceeds from commercialization or licensing of any products arising from the collaboration. To date, Volition has funded \$26,000 under this agreement.

Catalent Pharma Solutions LLC (“Catalent”)

On June 30, 2022, the Company entered into a Statement of Work (the “SOW”) with Catalent to outline the general scope of work, timeline, and pricing pursuant to which Catalent will provide certain services to the Company to perform cGMP manufacturing of the Company’s recombinant protein, Human DNase I. The parties agreed to enter into a Master Services Agreement that will contain terms and conditions to govern the project contemplated by the SOW and that will supersede the addendum to the SOW containing Catalent’s standard terms and conditions. The Company has paid Catalent approximately \$2.5 million through June 30, 2024, of which approximately \$28,000 and \$0.1 million has been recognized as an advance payment and is included in prepaid expenses, receivables and other current assets as of June 30, 2024 and December 31, 2023, respectively, and approximately \$49,000 has been recognized as a liability and is included in accrued expenses and other current liabilities as of June 30, 2024. There was no accrual as of December 31, 2023. In addition, approximately \$0.3 million has been recognized within other assets as of both June 30, 2024 and December 31, 2023.

Scripps Research Institute (“Scripps Research”)

On March 17, 2023, the Company and Scripps Research entered into a Research Funding and Option Agreement (the “Agreement”), pursuant to which the Company has agreed to provide Scripps Research an aggregate of up to \$0.9 million to fund research relating to advancing the pre-clinical development of the Company’s DNase oncology platform technology. Under the Agreement, the Company has the option to acquire a worldwide exclusive license to Scripps Research’s rights in the Technology or Patent Rights (as defined in the Agreement), as well as a non-exclusive, royalty-free, non-transferrable license to make and use TSRI Technology (as defined in the Agreement) solely for the Company’s internal research purposes during the performance of the research program contemplated by the Agreement. During the second quarter of 2024, the Company amended the Agreement to extend the term to October 31, 2024 with no additional funding required. The Company has paid Scripps Research approximately \$0.9 million under the Agreement through June 30, 2024, of which approximately \$0.1 million and \$0.4 million has been recognized as an advance payment and is included in prepaid expenses, receivables and other current assets as of June 30, 2024 and December 31, 2023, respectively.

University of Virginia (“UVA”)

On December 21, 2023, the Company entered into a Research Funding and Material Transfer Agreement with UVA (the “UVA Agreement”) to advance the development of our systemic DNase program. Under the terms of the UVA Agreement, in addition to advancing our existing intellectual property, we have an option to acquire an exclusive license to any new intellectual property arising from the DNase research program. Allan Tsung, MD, a member of the Company’s Scientific Advisory Board and Chair of the Department of Surgery at the UVA School of Medicine, will oversee the research conducted under the UVA Agreement. The Company has paid UVA approximately \$0.2 million under the UVA Agreement through June 30, 2024, which was expensed during the six months ended June 30, 2024. There were no amounts incurred as of December 31, 2023.

Other Agreements

The Company has also entered into various research, development, license and supply agreements with Serum Institute of India (“Serum Institute”), PJSC Pharmsynthez (“Pharmsynthez”) and SynBio LLC (“SynBio”), a wholly owned subsidiary of Pharmsynthez. The Company and its collaborative partners continue to engage in research and development activities with no resultant commercial products through June 30, 2024. No amounts were recognized as revenue related to the Serum Institute, Pharmsynthez or SynBio agreements during the three and six months ended June 30, 2024 and 2023, respectively.

5. Accrued Expenses and Other Current Liabilities

On June 19, 2024, the Company entered into a confidential separation agreement and general release with each of Jeffrey F. Eisenberg, the Company’s former Chief Executive Officer (the “Eisenberg Separation Agreement”), and Curtis Lockshin, the Company’s former Chief Scientific Officer (the “Lockshin Separation Agreement” and together, the “Separation Agreements”) pursuant to which Messrs. Eisenberg and Lockshin were each eligible for certain severance payments and benefits consistent with the terms of their existing employment agreements as described under “Employment Agreements with our Named Executive Officers” in the Amendment No. 1 to Annual Report on Form 10-K/A filed by the Company with the Securities and Exchange Commission on April 26, 2024. In addition, the Eisenberg Separation Agreement provides for accelerated vesting of all of the unvested stock options held by Mr. Eisenberg as of May 16, 2024. As of June 30, 2024, the Company expensed approximately \$0.8 million of accrued payroll and benefits related to the Separation Agreements. In addition, the Company recorded approximately \$13,000 of share-based expense for the accelerated vesting of unvested stock options. As of June 30, 2024, approximately \$0.8 million was accrued within accrued expenses and other current liabilities related to these obligations.

6. Fair Value Measurements

Accounting Standards Codification Topic 820, *Fair Value Measurement*, defines fair value as the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company applies the following fair value hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement. Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 2 utilizes quoted market prices in markets that are not active, broker or dealer quotations, or alternative pricing sources with reasonable levels of price transparency. Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. As of June 30, 2024 and December 31, 2023, the carrying amounts of the Company’s financial instruments approximates fair value due to their short maturities. There were no financial instruments classified as Level 3 in the fair value hierarchy during the three and six months ended June 30, 2024 and 2023.

7. Stockholders' Equity

Common Stock

Each share of the Company's common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to dividends when and if declared by the Board of Directors. In the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company, the holders of common stock are entitled to share ratably in the assets of the Company available for distribution.

On May 11, 2023, the Company filed a Certificate of Change to the Company's Articles of Incorporation with the Secretary of State of Nevada to effect the Reverse Stock Split. The Reverse Stock Split was effective at 12:01 a.m., Eastern Time, on May 15, 2023. No fractional shares were issued as a result of the Reverse Stock Split and any remaining share fractions were rounded up to the nearest whole share, resulting in 15,941 new shares of common stock being issued to existing holders of the Company's common stock.

Warrants

The Company has warrants to purchase approximately 462,963 shares of the Company's common stock (the "Series A Warrants") outstanding as of both June 30, 2024 and December 31, 2023. The Series A Warrants are immediately exercisable at a price of \$33.00 per share of common stock and expire on February 23, 2025. No Series A Warrants were exercised or forfeited during the three and six months ended June 30, 2024 and 2023.

In addition, the Company had publicly traded warrants to purchase approximately 2,100 shares of common stock outstanding as of both June 30, 2024 and December 31, 2023. These warrants had an exercise price of \$130.00 per share of common stock and expired on July 19, 2024. The warrants ceased trading on Nasdaq under the symbol "XBIOW" upon expiration. The warrants also provided that if the weighted-average price of common stock on any trading day on or after 30 days after issuance is lower than the then-applicable exercise price per share, each warrant may be exercised, at the option of the holder, on a cashless basis for one share of common stock. None of these warrants were exercised or forfeited during the three and six months ended June 30, 2024 and 2023.

The Company also has warrants to purchase approximately 800 shares of the Company's common stock outstanding as of both June 30, 2024 and December 31, 2023. These warrants have an exercise price of \$29.09 per share of common stock and expire on July 3, 2026. None of these warrants were exercised or forfeited during the three and six months ended June 30, 2024 and 2023.

8. Share-Based Expense

Total share-based expense related to stock options and RSU's was approximately \$42,000 and \$0.1 million for the three months ended June 30, 2024 and 2023, respectively, and approximately \$0.1 million and \$0.1 million for each of the six months ended June 30, 2024 and 2023.

Share-based expense is classified in the condensed consolidated statements of operations as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
Research and development expenses	\$ (3,804)	\$ 13,778	\$ 11,433	\$ 27,466
General and administrative expenses	45,900	55,611	107,737	110,775
	<u>\$ 42,096</u>	<u>\$ 69,389</u>	<u>\$ 119,170</u>	<u>\$ 138,241</u>

Employee Stock Options and RSU's

During the three and six months ended June 30, 2024, 20,000 stock options to purchase shares of common stock were granted by the Company. No stock option awards to purchase shares of common stock were granted during the three and six months ended June 30, 2023. No RSUs were granted during each of the three and six months ended June 30, 2024 and 2023. The Company recognized a total of approximately \$42,000 and \$0.1 million of share-based expense related to employee stock options during the three months ended June 30, 2024 and 2023, respectively, and \$0.1 million during each of the six months ended June 30, 2024 and 2023, respectively. The Company issued 417 shares of common stock during the three and six months ended June 30, 2024 related to RSU's. No employee stock options were exercised during the three and six months ended June 30, 2024 and 2023. During the three and six months ended June 30, 2024 stock options to purchase 11,667 shares of common stock were forfeited. No employee stock options expired during the three and six months ended June 30, 2023.

Non-Employee Stock Options

There were no non-employee stock options granted or exercised during the three and six months ended June 30, 2024 and 2023, respectively. No non-employee stock option grants expired during the three and six months ended June 30, 2024. During the six months ended June 30, 2023, non-employee stock option grants to purchase approximately 100 shares of common stock expired. The Company did not recognize any expense related to non-employee stock options during the three and six months ended June 30, 2024 and 2023, respectively.

9. Income Taxes

During the three and six months ended June 30, 2024 and 2023, there was no provision for income taxes as the Company incurred losses during both periods. Deferred tax assets and liabilities reflect the net tax effect of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The Company records a valuation allowance against its deferred tax assets as the Company believes it is more likely than not the deferred tax assets will not be realized. The valuation allowance against deferred tax assets was approximately \$40.4 million and \$39.7 million as of June 30, 2024 and December 31, 2023, respectively.

As of June 30, 2024 and December 31, 2023, the Company did not record any unrecognized tax positions.

10. Related Party Transactions

The Company has entered into various research, development, license and supply agreements with Serum Institute and Pharmsynthez, each a related party whose relationship has not materially changed from that disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2023 filed with the SEC on March 21, 2024, as amended on April 26, 2024.

During the fourth quarter of 2019, the Company entered into a loan agreement with Pharmsynthez (the "Pharmsynthez Loan"), pursuant to which the Company advanced Pharmsynthez an aggregate principal amount of up to \$500,000 to be used for the development of a specific product under the Company's Co-Development Agreement with Pharmsynthez. The Pharmsynthez Loan had an initial term of 15-months and accrued interest at a rate of 10% per annum. The Pharmsynthez Loan was guaranteed by all of the operating subsidiaries of Pharmsynthez, including SynBio and AS Kevelt, and was secured by all of the common and preferred stock of the Company owned by Pharmsynthez and SynBio.

Pharmsynthez paid all obligations due under the Pharmsynthez Loan in May 2023, and no further amounts are due under the Pharmsynthez Loan. As a result, no amounts were outstanding as of June 30, 2024 and December 31, 2023. The Company did not recognize any interest income related to the Pharmsynthez Loan during the three and six months ended June 30, 2024. The Company recognized approximately \$65,000 of income related to interest and fees associated with the Pharmsynthez Loan including approximately \$40,000 related to interest income during the three and six months ended June 30, 2023.

ITEM 2 – MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Section 27A of the Securities Act of 1933, as amended. All statements contained in this Quarterly Report other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, future revenues, projected costs, prospects and our objectives for future operations, are forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning: anticipated effects of geopolitical events, including the conflicts in the Ukraine and the Middle East and associated sanctions imposed by the U.S. and other countries in response; our plans to develop our proposed drug candidates; our expectations regarding the nature, timing and extent of clinical trials and proposed clinical trials; our expectations regarding the timing for proposed submissions of regulatory filings; our expectations regarding the nature, timing and extent of collaboration arrangements; the expected results pursuant to collaboration arrangements, including the receipts of future payments that may arise pursuant to collaboration arrangements; the outcome of our plans to obtain regulatory approval of our drug candidates; the outcome of our plans for the commercialization of our drug candidates; our plans to address certain markets, engage third party manufacturers, and evaluate additional drug candidates for subsequent commercial development along with the likelihood and extent of competition to our drug candidates; our plans to advance innovative immune-oncology technologies addressing hard to treat oncology indications; expectations regarding our Deoxyribonuclease (“DNase”) platform, such as regarding the DNase platform being in development for the treatment of solid tumors and being aimed at improving outcomes of existing treatments, including immunotherapies, by targeting neutrophil extracellular traps (“NETs”); our expectations to focus our efforts and resources on advancing the DNase platform into the clinic as an adjunctive therapy for pancreatic carcinoma and locally advanced or metastatic solid tumors; and our expectations regarding our PolyXen[®] platform, including concerning our plans to leverage the platform.

In some cases, these statements may be identified by terminology such as “may,” “will,” “would,” “could,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “seek,” “approximately,” “intend,” “predict,” “potential,” “projects,” or “continue,” or the negative of such terms and other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements contained herein are reasonable, we cannot guarantee future results, the levels of activity, performance or achievements. These statements involve known and unknown risks and uncertainties that may cause our or our industry’s results, levels of activity, performance or achievements to be materially different from those expressed or implied by forward-looking statements.

The Management’s Discussion and Analysis of Financial Condition and Results of Operations (the “MD&A”) should be read together with our condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report. This Quarterly Report, including the MD&A, contains trend analysis and other forward-looking statements. Any statements in this Quarterly Report that are not statements of historical facts are forward-looking statements. These forward-looking statements made herein are based on our current expectations, involve a number of risks and uncertainties and should not be considered as guarantees of future performance.

Some factors that could cause actual results to differ materially include without limitation:

- uncertainty of the expected financial performance of the Company;
- failure to realize the anticipated potential of the DNase or PolyXen technologies;
- our ability to implement our business strategy;
- our failure to maintain compliance with the continued listing requirements of the Nasdaq Stock Market (“Nasdaq”);
- our need to raise additional working capital in the future for the purpose of further developing our pipeline and to continue as a going concern;

- our ability to finance our business;
- our ability to successfully execute, manage and integrate key acquisitions and mergers;
- product development and commercialization risks, including our ability to successfully develop the DNase technology;
- the impact of adverse safety outcomes and clinical trial results for our therapies;
- our ability to secure and maintain a manufacturer for our technologies;
- the impact of new therapies and new uses of existing therapies on the competitive environment;
- our ability to successfully commercialize our current and future drug candidates;
- our ability to achieve milestone and other payments associated with our current and future co-development collaborations and strategic arrangements;
- our reliance on consultants, advisors, vendors and business partners to conduct work on our behalf;
- the impact of new technologies on our drug candidates and our competition;
- changes in laws or regulations of governmental agencies;
- interruptions or cancellation of existing contracts;
- impact of competitive products and pricing;
- product demand and market acceptance and risks;
- the presence of competitors with greater financial resources;
- continued availability of supplies or materials used in manufacturing at the current prices;
- the ability of management to execute plans and motivate personnel in the execution of those plans;
- our ability to attract and retain key personnel;
- costs, diversion and other adverse effects of the actions of activist shareholders;
- adverse publicity related to our products or the Company itself;
- adverse claims relating to our intellectual property;
- the adoption of new, or changes in, accounting principles;
- the costs inherent with complying with statutes and regulations applicable to public reporting companies, such as the Sarbanes-Oxley Act of 2002;
- other new lines of business that we may enter in the future;
- general economic and business conditions, as well as inflationary trends and financial market instability or disruptions to the banking system due to bank failures;
- the impact of natural disasters or public health emergencies, such as the COVID-19 global pandemic, and geopolitical events, such as the Russian invasion of Ukraine and conflict in the Middle East, and related sanctions and other economic disruptions or concerns, on our financial condition and results of operations; and
- other factors set forth in the Risk Factors section of our Annual Report on Form 10-K and in subsequent filings with the Securities and Exchange Commission (“SEC”).

These factors are not necessarily all of the important factors that could cause actual results to differ materially from those expressed in the forward-looking statements in this Quarterly Report. Other unknown or unpredictable factors also could have material adverse effects on our future results, including, but not limited to, those discussed in the section titled “Risk Factors.” The forward-looking statements in this Quarterly Report are made only as of the date of this Quarterly Report, and we do not undertake any obligation to publicly update any forward-looking statements to reflect subsequent events or circumstances. We intend that all forward-looking statements be subject to the safe-harbor provisions of the Private Securities Litigation Reform Act of 1995.

BUSINESS OVERVIEW

We are a biopharmaceutical company focused on advancing innovative immune-oncology technologies addressing hard to treat cancers. Our DNase platform is designed to improve outcomes of existing treatments, including immunotherapies, by targeting NETs, which have been implicated in cancer progression and resistance to cancer treatments. We are currently focused on advancing our systemic DNase program into the clinic as an adjunctive therapy for pancreatic carcinoma and locally advanced or metastatic solid tumors. Additionally, we have partnered with biotechnology and pharmaceutical companies to develop our proprietary drug delivery platform, PolyXen, and receive royalty payments under an exclusive license arrangement in the field of blood coagulation disorders.

We incorporate our patented and proprietary technologies into drug candidates currently under development with biotechnology and pharmaceutical industry collaborators to create what we believe will be the next-generation biologic drugs with improved pharmacological properties over existing therapeutics. Our drug candidates have resulted from our research activities or that of our collaborators and are in the development stage. As a result, we have committed a significant amount of our resources to our research and development activities and anticipate continuing to do so for the near future. To date, none of our drug candidates have received regulatory marketing authorization or approval in the U.S. by the Food and Drug Administration nor in any other countries or territories by any applicable agencies. We are receiving ongoing royalties pursuant to a license of our PolyXen technology to an industry partner. Although we hold a broad patent portfolio, the focus of our internal efforts during the three and six months ended June 30, 2024, was on the advancement of our DNase technology.

Impact of the Global Conflicts on Our Operations

The short and long-term implications of Russia's invasion of Ukraine and conflict in the Middle East are difficult to predict at this time. The imposition of current and future sanctions and counter sanctions may have an adverse effect on the economic markets generally and could impact our business, financial condition, and results of operations.

RESULTS OF OPERATIONS

Comparison of Quarter Ended June 30, 2024 and 2023

The comparison of our historical results of operations for the fiscal quarter ended June 30, 2024 to the fiscal quarter ended June 30, 2023 is as follows:

Description	Quarter Ended June 30, 2024	Quarter Ended June 30, 2023	Increase (Decrease)	Percentage Change
Revenues:				
Royalty revenue	\$ 726,404	\$ 651,005	\$ 75,399	11.6
Operating costs and expenses:				
Research and development	(933,771)	(903,243)	30,528	3.4
General and administrative	(1,130,029)	(945,950)	184,079	19.5
Total operating costs and expenses	(2,063,800)	(1,849,193)	214,607	11.6
Loss from operations	(1,337,396)	(1,198,188)	139,208	11.6
Other income (expense):				
Other (expense) income	(21)	21,122	(21,143)	(100.1)
Interest income, net	63,447	126,103	(62,656)	(49.7)
Net loss	\$ (1,273,970)	\$ (1,050,963)	\$ (223,007)	21.2

Revenue

Revenue for the three months ended June 30, 2024 increased by approximately \$0.1 million, or 11.6%, to approximately \$0.7 million from approximately \$0.7 million for the three months ended June 30, 2023. This increase represents an increase in royalty revenue related to our sublicense agreement with Takeda Pharmaceuticals Co. Ltd. (“Takeda”) as compared to the same period in 2023.

Research and Development Expenses

Research & development (“R&D”) expenses for the three months ended June 30, 2024 was relatively flat with the comparable quarter in 2023. The table below sets forth the R&D costs incurred by the Company by category of expense for the quarters ended June 30, 2024 and 2023:

Category of Expense	Quarter Ended,	
	June 30, 2024	June 30, 2023
Outside services and contract research organizations	\$ 474,850	\$ 731,045
Personnel costs	415,807	126,957
Share-based expense	(3,804)	13,778
Other	46,918	31,463
Total research and development expense	<u>\$ 933,771</u>	<u>\$ 903,243</u>

The decrease in outside services and contract research organizations expense was primarily due to decreased spending in connection with our pre-clinical and process development efforts related to our DNase platform. The increase in personnel costs is due to certain severance and benefits expensed in connection with a separation agreement entered into during the second quarter of 2024 with our former Chief Scientific Officer.

General and Administrative Expenses

General and administrative expenses for the three months ended June 30, 2024 increased by approximately \$0.2 million, or 19.5%, to approximately \$1.1 million from approximately \$0.9 million in the comparable quarter in 2023. The increase was primarily due to certain severance and benefits expensed in connection with a separation agreement entered into during the second quarter of 2024 with our former Chief Executive Officer. This increase was partially offset by general decreases in accounting and legal fees during the three months ended June 30, 2024 compared to the same period in 2023.

Other (Expense) Income

Other expense was \$21 for the three months ended June 30, 2024 compared to approximately \$21,000 of other income for the comparable quarter in 2023. This decrease in other income was primarily related to fees associated with the Pharmsynthez Loan recognized during the three months ended June 30, 2023. There were no similar fees received in the same period in 2024.

Interest Income

Interest income, net decreased to approximately \$63,000 during the three months ended June 30, 2024 as compared to approximately \$126,000 for the same period in the prior year. This decrease was primarily due to lower average invested funds during the three months ended June 30, 2024 compared to the same period in 2023 as well as a decrease in interest income on the Pharmsynthez Loan.

Comparison of Six Months Ended June 30, 2024 and 2023

The comparison of our historical results of operations for the six months ended June 30, 2024 to the six months ended June 30, 2023 is as follows:

Description	Six Months Ended June 30, 2024	Six Months Ended June 30, 2023	Increase (Decrease)	Percentage Change
Revenues:				
Royalty revenue	\$ 1,237,221	\$ 1,256,849	\$ (19,628)	(1.6)
Operating costs and expenses:				
Research and development	(1,878,092)	(1,498,519)	379,573	25.3
General and administrative	(1,964,939)	(1,871,693)	93,246	5.0
Total operating costs and expenses	(3,843,031)	(3,370,212)	472,819	14.0
Loss from operations	(2,605,810)	(2,113,363)	492,447	23.3
Other income (expense):				
Other income	31	25,642	(25,611)	(99.9)
Interest income, net	136,696	180,204	(43,508)	(24.1)
Net loss	<u>\$ (2,469,083)</u>	<u>\$ (1,907,517)</u>	<u>\$ 551,566</u>	29.4

Revenue

Revenue for the six months ended June 30, 2024 was relatively flat with the six months ended June 30, 2023.

Research and Development Expenses

R&D expenses for the six months ended June 30, 2024 increased by approximately \$0.4 million, or 25.3%, to approximately \$1.9 million from approximately \$1.5 million in the comparable period in 2023. The table below sets forth the R&D costs incurred by the Company by category of expense for the six months ended June 30, 2024 and 2023:

Category of Expense	Six Months Ended,	
	June 30, 2024	June 30, 2023
Outside services and contract research organizations	\$ 1,220,522	\$ 1,154,912
Personnel costs	561,612	251,750
Share-based expense	11,433	27,466
Other	84,525	64,391
Total research and development expense	<u>\$ 1,878,092</u>	<u>\$ 1,498,519</u>

The increase in outside services and contract research organizations expense was primarily due to increased spending in connection with our pre-clinical development efforts offset by lower process development efforts related to our DNase platform. The increase in personnel costs is due to certain severance and benefits expensed in connection with a separation agreement entered into during the second quarter of 2024 with our former Chief Scientific Officer.

General and Administrative Expenses

General and administrative expenses for the six months ended June 30, 2024 increased by approximately \$0.1 million, or 5.0%, to approximately \$2.0 million from approximately \$1.9 million in the comparable period in 2023. The increase was primarily due to certain severance and benefits expensed in connection with a separation agreement entered into during the second quarter of 2024 with our former Chief Executive Officer. This increase was partially offset by general decreases in accounting and legal fees during the six months ended June 30, 2024 compared to the same period in 2023.

Other Income

Other income was \$31 for the six months ended June 30, 2024 compared to approximately \$26,000 of other income for the six months ended June 30, 2023. This decrease in other income was primarily related to fees associated with the Pharmsynthez Loan recognized during the six months ended June 30, 2023 for which there were no similar fees received in the same period in 2024.

Interest Income

Interest income decreased to approximately \$137,000 during the six months ended June 30, 2024 as compared to approximately \$180,000 for the same period in the prior year. This decrease was primarily due to lower average invested funds during the six months ended June 30, 2024 compared to the same period in 2023 as well as a decrease in interest income received on the Pharmsynthez Loan.

Liquidity and Capital Resources

We incurred a net loss of approximately \$2.5 million for the six months ended June 30, 2024. We had an accumulated deficit of approximately \$195.7 million at June 30, 2024, as compared to an accumulated deficit of approximately \$193.2 million at December 31, 2023. Working capital was approximately \$6.4 million at June 30, 2024, and approximately \$8.8 million at December 31, 2023. During the six months ended June 30, 2024, our working capital decreased by approximately \$2.3 million primarily due to our net loss for the six months ended June 30, 2024.

Our principal source of liquidity consists of cash. At June 30, 2024, we had approximately \$7.3 million in cash and approximately \$1.6 million in current liabilities. At December 31, 2023, we had approximately \$9.0 million in cash and approximately \$0.8 million in current liabilities. We have historically relied upon sales of our equity securities to fund our operations.

We evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued. We have incurred substantial losses since our inception, and we expect to continue to incur operating losses in the near-term. The Company believes that its existing resources will be adequate to fund the Company's operations for a period of at least twelve months from the date of the issuance of these financial statements. However, we anticipate we will need additional capital in the long-term to pursue our business initiatives. While the Company believes it has access to capital resources through possible public or private equity offerings, debt financings, corporate collaborations, related party funding, or other means to continue as a going concern, the terms, timing and extent of any future financing will depend upon several factors, including the achievement of progress in our clinical development programs, our ability to identify and enter into licensing or other strategic arrangements, our continued listing on Nasdaq, and factors related to financial, economic, geo-political, industry and market conditions, many of which are beyond our control. The capital markets for the biotech industry can be highly volatile, which make the terms, timing and extent of any future financing uncertain.

Cash Flows from Operating Activities

Cash flows used in operating activities for the six months ended June 30, 2024 totaled approximately \$1.7 million, which was primarily due to our net loss for the period, partially offset by non-cash charges associated with share-based expense and an increase in current liabilities during the period. Cash flows used in operating activities for the six months ended June 30, 2023 totaled approximately \$2.4 million, which was primarily due to our net loss for the period as well as advance payments made in accordance with our statement of work with Catalent, partially offset by cash received from the repayment of the Pharmsynthez Loan. In addition, current liabilities decreased during the six months ended June 30, 2023.

Cash Flows from Investing Activities

There were no cash flows from investing activities for the six months ended June 30, 2024 and 2023.

Cash Flow from Financing Activities

There were no cash flows from financing activities for the six months ended June 30, 2024 and 2023.

Contractual Obligations and Commitments

As of June 30, 2024, there were no material changes in our contractual obligations and commitments from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 21, 2024, as amended on April 26, 2024.

Off Balance Sheet Arrangements

We do not have any off-balance sheet financing arrangements that have or are reasonably likely to have a current or future material effect on our financial condition, change in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures, or capital resources.

Recent Accounting Standards

See Note 3 in our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 21, 2024, as amended on April 26, 2024, for a discussion of recent accounting standards.

Critical Accounting Estimates

Our condensed consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles. The preparation of our condensed consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenue, costs and expenses. We base our estimates and assumptions on historical experience and other factors that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. The result of these evaluations forms the basis for making judgments about the carrying values of assets and liabilities and the reported amount of expenses that are not readily apparent from other sources. Because future events and their effects cannot be determined with certainty, actual results and outcomes may differ materially from our estimates, judgments and assumptions. There have been no material changes in our critical accounting estimates from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 21, 2024, as amended on April 26, 2024.

ITEM 3 – QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are not required to provide the information required by this Item because we are a “smaller reporting company” (as defined in Rule 12b-2 of the Exchange Act).

ITEM 4 – CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Interim Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer), evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) or 15d-15(e) under the Exchange Act, as of the end of the period covered by this Quarterly Report.

Based on this evaluation, our management, including our Interim Chief Executive Officer and Chief Financial Officer, concluded that as of the end of the period covered by this Quarterly Report, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our Interim Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the period covered by this Quarterly Report that would have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

ITEM 1 – LEGAL PROCEEDINGS

We are not currently subject to any material legal proceedings, nor, to our knowledge, is any material legal proceeding threatened against us. From time to time, we may be a party to certain legal proceedings, incidental to the normal course of our business. While the outcome of these legal proceedings cannot be predicted with certainty, we do not expect that these proceedings will have a material effect upon our financial condition or results of operations.

ITEM 1A – RISK FACTORS

There have been no material changes to the risk factors previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2023 filed with the SEC on March 21, 2024, as amended on April 26, 2024.

ITEM 2 – UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3 – DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4 – MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5 – OTHER INFORMATION

During the quarter ended June 30, 2024, no director or officer adopted or terminated any Rule 10b5-1 trading arrangement or non-Rule 10b5-1 trading arrangement, as each term is defined in Item 408(a) of Regulation S-K.

ITEM 6 – EXHIBITS

The following exhibits are incorporated herein by reference or filed as part of this report.

EXHIBIT NUMBER	DESCRIPTION
10.1*	Confidential Separation Agreement and General Release, dated June 19, 2024, between Jeffrey Eisenberg and Xenetic Biosciences, Inc.
10.2*	Confidential Separation Agreement and General Release, dated June 19, 2024, between Curtis Lockshin and Xenetic Biosciences, Inc.
10.3*	Amendment to Employment Agreement, dated June 18, 2024, between James F. Parslow and Xenetic Biosciences, Inc.
31.1*	Certification of James Parslow, Interim Principal Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of James Parslow, Principal Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certification of James Parslow, Interim Principal Executive Officer and Principal Financial Officer, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101*	The following financial statements from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2024, formatted in inline XBRL, include: (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations, (iii) Condensed Consolidated Statements of Changes in Stockholders' Equity, (iv) Condensed Consolidated Statements of Cash Flows and (v) the Notes to the Condensed Consolidated Financial Statements.
104*	Cover Page Interactive Data File (formatted in inline XBRL and included in Exhibit 101)
*	Filed herewith.
**	Exhibit 32.1 is being furnished and shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall such exhibits be deemed to be incorporated by reference in any registration statement or other document filed under the Securities Act of 1933, as amended or the Securities Exchange Act of 1934, as amended, except as otherwise stated in such filing.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

XENETIC BIOSCIENCES, INC.

August 13, 2024

By: /S/ JAMES PARSLOW

James Parslow

Interim Chief Executive Officer and Chief Financial Officer

(Principal Executive, Principal Financial Officer and Principal Accounting Officer)

Execution Version**CONFIDENTIAL SEPARATION AGREEMENT & GENERAL RELEASE**

THIS CONFIDENTIAL SEPARATION AGREEMENT & GENERAL RELEASE ("Agreement") is made and entered into by and between Jeffrey Eisenberg ("Executive"), and Xenetic Biosciences, Inc. (the "Company"). Executive and Company are collectively referred to herein as the "Parties."

I. Recitals

- A. Executive is currently employed by Company on an at will basis pursuant to the terms of that certain Amended and Restated Employment Agreement, by and between the Executive and Company, dated October 26, 2017 (the "Employment Agreement");
- B. On May 16, 2024, the Board of Directors (the "Board") of the Company approved the termination of Executive from all roles in the Company, effective immediately, and recommended that Executive tender his resignation from the Board;
- C. Executive's last date of employment is May 16, 2024 (the "Separation Date");
- D. Executive acknowledges that from and after the Separation Date, Executive has no authority to, and shall not, represent himself as an employee or agent of Company;
- E. Executive represents and warrants that he does not have any claims or charges pending against Company with any court, tribunal or administrative agency;
- F. Executive and Company desire to enter into this Agreement related to Executive's separation from Company; and
- G. Nothing within this Agreement shall constitute an admission of any liability or wrongdoing by Company, which expressly denies any liability or wrongdoing.

II. General Provisions

The Parties hereby agree as follows:

A. Recitals

The Recitals contained in Section I are incorporated herein and made a part hereof.

B. Release and Discharge by Executive

1. The term "Released Parties" includes the Company, Insperty PEO Services, L.P. ("Insperty") and their respective current or former officers, directors, shareholders, investors, owners, partners, employees, associates, servants, agents, managing agents, partnerships, trustees, predecessors, successors, assigns, affiliates, parent corporations, and/or subsidiaries; and/or any other entity or company operated, affiliated with, controlled by, or under common control with any one of the foregoing; and each of their predecessors, successors, assigns, affiliates, partnerships, parent corporations, subsidiaries (whether or not wholly owned), divisions, business units by or through which Company does business, partners (including partners of partnerships and affiliates), related entities, all of their trustees, directors, officers, attorneys, insurers, reinsurers, accountants, lenders, investors, agents, servants, representatives, employees and former employees (in their respective capacities as such, in their individual and personal capacities, and in any and all other capacities); and all other related entities of any type, scope or existence, of each of the foregoing. Any reference to the "Released Parties" includes one or more or all of them.

2. The term “Released Claims” means and shall include any and all claims, actions, and causes of action, liens, debts, liabilities, demands, obligations, contracts or commitments, suits, debts, accounts, covenants, disputes, controversies, agreements, promises, acts, costs and expenses, damages, and executions, of whatever kind or nature, including without limitation any statutory, civil, common law or administrative claim, such as but not limited to the following: claims under Title VII of the Civil Rights Act of 1964 and/or 1991, Section 1981 of the Civil Rights Act of 1866, the Americans with Disabilities Act of 1990, the Family and Medical Leave Act of 1993, the Fair Labor Standards Act of 1938, the Executive Retirement Income Security Act of 1974, the National Labor Relations Act of 1935, the Equal Pay Act of 1963, the Consolidated Omnibus Budget Reconciliation Act of 1985 (“COBRA”), the Immigration Reform and Control Act of 1986, the Occupational Safety and Health Act of 1970, the Worker Adjustment and Retraining Notification Act of 1988, the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010, the Health Insurance Portability and Accountability Act of 1996, the Vocational Rehabilitation Act of 1973 (29 U.S.C. § 701 *et seq.*), or any related state law or local ordinance related to employment or employment discrimination; claims for disputed wages and penalties under federal or state law; claims for compensation, severance, employee benefits and vacation or sick pay; attorneys’ fees, costs, expenses and expert witness fees and expenses; tort damages or personal injury damages; breach of implied or express contract; retaliation, failure to accommodate; failure to engage in an interactive process; wrongful termination in violation of public policy; breach of fiduciary duty; declaratory relief; injunctive relief; public policy breach; intentional or negligent infliction of emotional distress; breach of the Employment Agreement or any other employment contract (whether express, implied in law or fact, oral or written); breach of implied covenant of good faith and fair dealing; interference with contract; intentional or negligent interference with prospective economic advantage; intentional or negligent misrepresentation, promissory fraud, or fraud; conversion; defamation; libel or slander; discrimination, retaliation, harassment or hostile work environment on the basis of any statutorily protected class including but not limited to disability or age, or failure to prevent such discrimination, retaliation, harassment or hostile work environment; negligent hiring; constructive discharge; disparagement of any kind or nature; invasion of privacy; civil assault; malicious prosecution; abuse of process; declaratory or injunctive relief, or in any other type of action or proceeding, whether known or unknown, suspected or unsuspected, fixed or contingent, at law or in equity, which Executive ever had or held, now has or holds, or hereafter can, shall, or may have or hold at any time in the future, in any capacity, individually or as a member of a class, collective or representative action, relator-employee, or action for public benefit with respect to Executive’s employment with Company, or the termination thereof, the subject matter of this Agreement, or any other matters with, by or between Company, or the Released Parties and Executive, or by any one or more of the Released Parties against Executive, at any time prior to and through the Effective Date of this Agreement. The Released Claims expressly exclude claims that may not be waived under applicable law at the time the Agreement is executed by Executive.

3. In consideration of the terms and provisions of the Agreement, Executive shall and does hereby and forever fully, finally and forever generally remise, release, waive and discharge Company and the Released Parties from any and all known or unknown, suspected or unsuspected, fixed or contingent claims, rights, actions and causes of action, including but not limited to the Released Claims, at law or in equity, which Executive ever had or held, now has or holds, or hereafter can, shall, or may have or hold against Company or any or all of the Released Parties based on any occurrences, transactions, events, acts, or omissions of any kind whatsoever from any time prior to and through the Effective Date of the Agreement.

4. Nothing in this Agreement prohibits Executive from: (a) filing an administrative charge of discrimination or an administrative charge within the jurisdiction of the National Labor Relations Board (“NLRB”) or Equal Employment Opportunity Commission (“EEOC”) or similar state or local civil rights agencies; (b) communicating directly with the U.S. Securities and Exchange Commission (“SEC”) about a possible securities law violation which Executive is not required to report or disclose to the Company; or (c) filing a charge or communicating with any other federal, state or local government office, official or agency concerning matters relevant to such governmental office or agency. Executive promises never to seek or accept any damages, remedies, or other relief, for Executive personally (any right to which Executive hereby waives and promises never to accept) with respect to any claim released hereunder, in any proceeding including, but not limited to, any EEOC or NLRB proceeding, other than a benefit or remedy pursuant to Section 922 of the Dodd-Frank Wall Street Reform or the Consumer Protection Act or as otherwise required by law. Notwithstanding the foregoing, this Agreement does not limit Executive’s right to receive an award for information provided to the SEC.

C. Payment and Other Consideration

1. Consideration.

a) In consideration of the releases and promises set forth in this Agreement:

i. the Company shall pay Executive the sum of \$420,420, representing an amount equal to one times Executive's Base Salary (as defined in the Employment Agreement), less all applicable withholdings, deductions and taxes as required by law, payable in one lump sum within thirty days after the Effective Date (as defined in Section X below) (the "Separation Payment");

ii. all of the unvested stock options held by Executive as of the Separation Date as listed on Exhibit A shall fully vest on the Separation Date and not be subject to forfeiture; and

iii. the Company shall reimburse Executive for reasonable legal fees in an amount not to exceed \$10,000 that the Executive incurs in connection with the negotiation of this Agreement, subject to the delivery of appropriate documentation thereof and provided that the Executive shall submit invoices to the Company within thirty (30) days of incurrence of the expense.

b) The Separation Payment will be reported on an IRS Form W-2. Executive understands, acknowledges and agrees that the Separation Payment will be paid by the Company, provided: (a) Executive is not in breach of any term, condition, warranty, representation, covenant or provision of this Agreement, (b) Executive does not revoke the Agreement within the Revocation Period described in Section IX below; and (c) Executive first returns a signed and dated copy of this Agreement to the Company. Executive acknowledges that the Separation Payment and other consideration to be provided under the terms of this Agreement is not an entitlement and shall serve as good and sufficient consideration of the promises made by Executive herein. Executive further acknowledges that the Separation Payment to be paid under this Agreement is due solely from the Company and that Insuperity has no obligation to pay the Separation Payment even though its payment may be processed through Insuperity.

c) Executive acknowledges and agrees that the Compensation Committee of the Board of the Company has not established an annual bonus target for Executive or any related performance goals for an annual bonus for Executive and, therefore the pro rata portion of the annual performance-based cash bonus for fiscal year 2024 owed to Executive pursuant to Section 7(d)(ii) of the Employment Agreement shall be deemed to be \$0.

2. Outstanding Equity Awards. The Executive's outstanding equity awards as of the Separation Date are set forth on Exhibit A to this Agreement. Executive understands and agrees that except as otherwise specified herein, treatment of the Executive's outstanding equity awards will be governed by the terms and conditions of the applicable award agreements and the Xenetic Biosciences, Inc. Amended and Restated Equity Incentive Plan. Per the terms of the applicable stock option award agreements, all vested stock options as of the Separation Date may be exercised at any time during the three or twelve month period, as applicable, following the Separation Date, as set forth on Exhibit A.

3. Final Paycheck and Expenses. Regardless of whether the Executive signs this Agreement, the Employee acknowledges and agrees that the Company has (a) paid the Executive for any accrued but unpaid portion of the Executive's Base Salary through the Separation Date, (b) reimbursed the Executive for reasonable out-of-pocket business expenses that were appropriately incurred by the Executive prior to the Separation Date in furtherance of the business of the Company, subject to the Company's applicable business expense reimbursement policy, and (c) paid the Executive an amount equal to any accrued but unused vacation pay as of the Separation Date.

4. **Benefits.** Following the Separation Date, Executive will be eligible to continue Executive's participation in the Company's group health benefit plans, such as they may exist from time-to-time, if and to the extent Executive was enrolled in such plans as of the Separation Date. Such benefits continuation will be provided concurrent with and in accordance with the terms of COBRA and/or applicable state/local benefits continuation laws. If Executive elects to receive such continued healthcare coverage, the Company shall reimburse Executive for the premium for Executive and Executive's covered dependents, less the amount of Executive's monthly premium contributions for such coverage prior to termination, for the period commencing on the first day following the Separation Date through the earlier of (i) the last day of the month during the first twelve months following the Separation Date and (ii) the date Executive and Executive's covered dependents, if any, become eligible for healthcare coverage under another employer's plan(s). Executive shall notify the Company immediately if Executive becomes covered by a group health plan of a subsequent employer. If Executive does not elect COBRA, the Company has no obligation to pay any form of insurance coverage after the Separation Date. Executive further agrees and acknowledges that, except as specifically provided in this Agreement, Executive's participation in all Company employee benefit plans shall terminate as of the Separation Date.

5. **No Other Payments.** Executive expressly acknowledges and agrees that this Agreement provides Executive with compensation to which Executive would not otherwise be entitled. Executive acknowledges and agrees that Executive has been paid all final wages owed to Executive by Company, and that these monies were due and owing to Executive regardless of whether Executive chooses to execute the Agreement or not. Other than payment of the Separation Payment and other payments and additional benefits provided hereunder, Executive acknowledges that no other payments, including but not limited to those for back pay, front pay, salary, benefits, bonus, vacation or sick pay, civil or statutory penalties, general or compensatory damages, interest, or costs for the period of time Executive was employed by the Company, or for any other period, are due and owing to Executive from Company or the Released Parties.

D. Survival of Covenants

Executive agrees that the covenants with respect to non-competition, non-solicitation, confidentiality, inventions and return of property set forth in Sections 9 through 13 in the Employment Agreement shall survive the separation of Executive's employment with the Company and remain in full force and effect; provided, however, that for the sake of clarity, "Competing Products" as defined in Section 9(c)(i) of the Employment Agreement shall be amended and restated to mean: "any product, process, or service of any person or organization other than the Company, in existence or under development, which is identical to, substantially the same as, or an adequate substitute for the Deoxyribonuclease (DNase) platform and the PolyXen technology."

E. Confidentiality and Nondisclosure of this Agreement

1. Executive acknowledges that the confidentiality and non-disclosure of all terms and conditions of this Agreement is an integral part of the agreement to pay severance benefits to Executive, and was a material inducement for Company to enter into this Agreement.

2. Executive agrees that Executive will maintain the terms of this Agreement in complete confidentiality. Executive shall make no comments, to any person or entity, including but not limited to the media, friends, co-workers, or former co-workers from Company regarding the Agreement, including the Separation Payment. For purposes of this Agreement, the word "comments" includes any form of communication, whether oral, written, electronic or otherwise. Executive acknowledges that these nondisclosure provisions are an integral part of this Agreement. Executive may disclose the terms of this Agreement to Executive's spouse, attorneys and tax preparer/accountants provided that such disclosure to the attorneys and tax preparer/accountants is made for the purposes of the attorneys and tax preparer/accountants providing legal and/or tax advice and provided that Executive's spouse, Executive's attorneys and tax preparer/accountants agree to be bound by this confidentiality section. Executive, if required by a Court order or subpoena, or as otherwise permitted by law, may disclose the terms of this Agreement without breaching these confidentiality provisions provided that in the event a demand is made upon Executive for the disclosure of the terms of the Agreement, Executive shall, within 48 hours immediately notify the Company of the demand, so that Company may have sufficient time to seek any necessary orders, including a protective order, or to otherwise participate in the tribunal's determination of the issue.

F. Waiver of Reemployment

Executive agrees that by executing this Agreement, Executive waives and releases forever any right or rights Executive might have to seek or obtain employment, reemployment, or reinstatement with Company or the Released Parties.

G. Return of Company Property, Log Ins and Passwords

In order to be eligible to receive the Separation Payment, immediately prior to the Effective Date, Executive must return to Company all Company property and all Company confidential information in Executive's possession, and Executive must provide to Company all log ins and passwords to any software, website, application or program, which Executive maintained and used as part of the performance of Executive's job duties and responsibilities.

III. Warranty of Capacity to Execute Agreement

Executive represents and warrants that no other person or entity has or has had any interest in the claims, demands, obligations or causes of action referred to in this Agreement; that Executive has the sole and exclusive right to receive sums specified in it; that Executive has not sold, assigned, transferred, conveyed or otherwise disposed of any of the claims, demands, obligations or causes of action referred to in this Agreement; and that Executive has the mental capacity to understand and execute the terms and conditions of the Agreement.

IV. Disclaimer of Liability

Executive agrees to indemnify and hold harmless Company and the Released Parties from any and all claims or liens presently existing against the Separation Payment hereby by any person, entity or corporation, as well as any attorneys' fees and costs incurred in representation of Company or the Released Parties in litigation concerning any claims or liens, including but not limited to any claims or liens for attorneys' fees and costs.

V. Entire Agreement & Successors in Interest

Except as otherwise provided herein, Executive agrees that this Agreement contains the entire agreement between Executive and Company with respect to the matters set forth in it, and shall be binding upon and inure to the benefit of Executive's executors, administrators, personal representatives, heirs, successors and assigns. There are no other understandings or agreements, verbal or otherwise, in relation thereto between the Parties, except as herein expressly set forth. There have been no representations not set forth herein that Executive has relied upon when entering into this Agreement. Executive agrees that should any provision of this Agreement require interpretation or construction that all Parties have participated in the drafting of this document and no presumption regarding construing the document against one Party shall apply.

VI. Severability

If any provision in this Agreement is found to be unenforceable, all other provisions will remain fully enforceable. The covenants set forth in this Agreement shall be considered and construed as separate and independent covenants. Should any part or provision of any provision of this Agreement be held invalid, void or unenforceable in any court of competent jurisdiction, such invalidity, voidness or unenforceability shall not render invalid, void or unenforceable any other part or provision of this Agreement.

VII. Governing Law

This Agreement is entered into in the State of Florida, and shall be construed and interpreted in accordance with its laws. The Parties agree that the proper and appropriate venue for any action arising from this Agreement shall be any court of competent jurisdiction in Miami-Dade County, Florida.

VIII. Additional Documents

Executive agrees to cooperate fully, and execute any and all supplementary documents, and take all additional actions which may be necessary or appropriate to give full force and effect to the basic terms and intent of this Agreement.

IX. Acknowledgement of Voluntariness and Opportunity for Review and Revocation

1. Executive acknowledges that (a) Executive knowingly and voluntarily enters into this Agreement with the purpose of waiving any right and releasing any claims under the Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621, *et seq.* (“ADEA”); (b) Executive was given a period of up to twenty-one (21) days within which to review and consider this Agreement; (c) Executive understood Executive could use as much of said 21-day period as Executive desired; (d) Executive was encouraged by Company to consult with a lawyer, at Executive’s own expense; (e) if Executive decided not to use the 21-day period, Executive is signing this Agreement voluntarily and of Executive’s own free will; and (f) this Agreement is not final and binding until the seven-day period of revocation, described in the following sentences of this Section of the Agreement, has expired. Executive understands that Company would not have given Executive the special payments or benefits Executive is getting in exchange for this Agreement but for Executive’s promises and representations Executive is making by signing it.

2. Executive acknowledges that Executive may revoke Executive’s waiver of the rights and release of any ADEA (age discrimination) claims covered by this Agreement, by delivering written notice of Executive’s revocation of this Agreement to Jim Parslow at j.parslow@xeneticbio.com, no later than the close of business on the seventh (7th) calendar day after the date on which Executive signed this Agreement (the “Revocation Period”). The written notice of revocation must state: “I HEREBY REVOKE MY ACCEPTANCE OF THE CONFIDENTIAL SEPARATION AGREEMENT AND GENERAL RELEASE.” If the Agreement is revoked in a timely manner, this Agreement shall not be effective, and Executive shall not receive the Separation Payment as described in Section II.C. herein.

X. Effectiveness and Electronic Signatures

This Agreement shall become effective following execution by all the Parties (“Effective Date”). This Agreement may be executed via manual signature or electronic signature. “Electronic signature” means (a) the signing party’s manual signature, converted by the signing party to facsimile or industry-accepted digital form (such as a .pdf file) and received from the signing party’s customary email address, customary facsimile number, or other mutually agreed-upon authenticated source; or (b) the signing party’s digital signature executed using a mutually agreed-upon digital signature service provider, such as DocuSign or Adobe sign, and digital signature process. Each Party to this Agreement (i) agrees that it will be bound by its own electronic signature, (ii) accepts the electronic signature of each other Party to this Agreement, and (iii) agrees that such electronic signatures shall be the legal equivalent of manual signatures. This Agreement may be so executed in counterparts, each of which will be considered an original and all such counterparts will be considered and constitute one and the same agreement.

XI. Disparaging Statements

Neither the Executive nor the Company shall make any remarks or statements, either publicly or privately, orally or in writing, that are disparaging of the other party. The Executive shall not make any remarks or statements, either publicly, orally or in writing that are disparaging of the Company’s actual or prospective business and/or, in such capacities, current or former employees, officers, directors, trade partners, vendors, suppliers, or customers of the Company, either individually or collectively. For the avoidance of doubt, this includes remarks or statements, public or private, made via electronic mail, blogs, social media (such as, Facebook, Twitter or X, LinkedIn, Instagram or any other similar platform). This provision is subject to each party’s legally protected rights to communicate with governmental bodies and agencies and to engage in otherwise legally protected activity.

[remainder of page intentionally blank]

EMPLOYEE:

/s/ Jeffrey Eisenberg

Jeffrey Eisenberg
Date: June 19, 2024

COMPANY:

Xenetic Biosciences, Inc.

By: /s/ James Parslow

Name: James Parslow
Title: Interim Chief Executive Officer and Chief Financial Officer
Date: June 19, 2024

[Signature page to Separation and Release Agreement]

Exhibit A

Xenetic Biosciences, Inc.

Jeffrey Eisenberg – Outstanding Equity as of May 16, 2024

Date of Grant	Shares	Exercise Price	Expiration Date	Total Vested	Total Unvested	Vesting	Exercisability post termination
Stock Options							
12/2/2016	1,917	\$ 409.20	12/2/2026	1,917	-	Fully Vested	90 days post termination date
10/26/2017	1,042	\$ 253.20	10/26/2027	1,042	-	Fully Vested	12 months post termination date
12/4/2019	23,000	\$ 13.10	12/4/2029	23,000	-	Fully Vested	12 months post termination date
3/18/2021	10,000	\$ 26.00	3/18/2031	10,000	-	Fully Vested	12 months post termination date
3/24/2022	10,000	\$ 11.20	3/24/2032	6,667	3,333	1/3rd on March 24, 2023; 2/3rds over remaining 8 quarters commencing June 24, 2023 thru March 24, 2025	12 months post termination date
12/11/2023	20,000	\$ 3.88	12/11/2033	-	20,000	1/3rd on December 11, 2024; 2/3rds over remaining 8 quarters commencing March 11, 2025 thru Dec 11, 2026	12 months post termination date
Restricted Stock Units							
10/26/2017	417	N/A	N/A	417	-	Fully Vested	N/A

Execution Version**CONFIDENTIAL SEPARATION AGREEMENT & GENERAL RELEASE**

THIS CONFIDENTIAL SEPARATION AGREEMENT & GENERAL RELEASE ("Agreement") is made and entered into by and between Curtis Lockshin ("Executive"), and Xenetic Biosciences, Inc. (the "Company"). Executive and Company are collectively referred to herein as the "Parties."

I. Recitals

- A. Executive is currently employed by Company on an at will basis pursuant to the terms of that certain Employment Agreement, by and between the Executive and Company, dated January 1, 2017 (the "Employment Agreement");
- B. On May 16, 2024, the Board of Directors of the Company approved the termination of Executive from all roles in the Company and all of its subsidiaries, as applicable, effective immediately;
- C. Executive's last date of employment is May 16, 2024 (the "Separation Date");
- D. Executive acknowledges that from and after the Separation Date, Executive has no authority to, and shall not, represent himself as an employee or agent of Company;
- E. Executive represents and warrants that he does not have any claims or charges pending against Company with any court, tribunal or administrative agency;
- F. Executive and Company desire to enter into this Agreement related to Executive's separation from Company; and
- G. Nothing within this Agreement shall constitute an admission of any liability or wrongdoing by Company, which expressly denies any liability or wrongdoing.

II. General Provisions

The Parties hereby agree as follows:

A. Recitals

The Recitals contained in Section I are incorporated herein and made a part hereof.

B. Release and Discharge by Executive

1. The term "Released Parties" includes Company, Insperity PEO Services, L.P. ("Insperity") and their respective current or former officers, directors, shareholders, investors, owners, partners, employees, associates, servants, agents, managing agents, partnerships, trustees, predecessors, successors, assigns, affiliates, parent corporations, and/or subsidiaries; and/or any other entity or company operated, affiliated with, controlled by, or under common control with any one of the foregoing; and each of their predecessors, successors, assigns, affiliates, partnerships, parent corporations, subsidiaries (whether or not wholly owned), divisions, business units by or through which Company does business, partners (including partners of partnerships and affiliates), related entities, all of their trustees, directors, officers, attorneys, insurers, reinsurers, accountants, lenders, investors, agents, servants, representatives, employees and former employees (in their respective capacities as such, in their individual and personal capacities, and in any and all other capacities); and all other related entities of any type, scope or existence, of each of the foregoing. Any reference to the "Released Parties" includes one or more or all of them.

2. The term “Released Claims” means and shall include any and all claims, actions, and causes of action, liens, debts, liabilities, demands, obligations, contracts or commitments, suits, debts, accounts, covenants, disputes, controversies, agreements, promises, acts, costs and expenses, damages, and executions, of whatever kind or nature, including without limitation any statutory, civil, common law or administrative claim, such as but not limited to the following: claims under Title VII of the Civil Rights Act of 1964 and/or 1991, Section 1981 of the Civil Rights Act of 1866, the Americans with Disabilities Act of 1990, the Family and Medical Leave Act of 1993, the Fair Labor Standards Act of 1938, the Executive Retirement Income Security Act of 1974, the National Labor Relations Act of 1935, the Equal Pay Act of 1963, the Consolidated Omnibus Budget Reconciliation Act of 1985 (“COBRA”), the Immigration Reform and Control Act of 1986, the Occupational Safety and Health Act of 1970, the Worker Adjustment and Retraining Notification Act of 1988, the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010, the Health Insurance Portability and Accountability Act of 1996, the Vocational Rehabilitation Act of 1973 (29 U.S.C. § 701 *et seq.*), or any related state law or local ordinance related to employment or employment discrimination; claims for disputed wages and penalties under federal or state law; claims for compensation, severance, employee benefits and vacation or sick pay; attorneys’ fees, costs, expenses and expert witness fees and expenses; tort damages or personal injury damages; breach of implied or express contract; retaliation, failure to accommodate; failure to engage in an interactive process; wrongful termination in violation of public policy; breach of fiduciary duty; declaratory relief; injunctive relief; public policy breach; intentional or negligent infliction of emotional distress; breach of the Employment Agreement or any other employment contract (whether express, implied in law or fact, oral or written); breach of implied covenant of good faith and fair dealing; interference with contract; intentional or negligent interference with prospective economic advantage; intentional or negligent misrepresentation, promissory fraud, or fraud; conversion; defamation; libel or slander; discrimination, retaliation, harassment or hostile work environment on the basis of any statutorily protected class including but not limited to disability or age, or failure to prevent such discrimination, retaliation, harassment or hostile work environment; negligent hiring; constructive discharge; disparagement of any kind or nature; invasion of privacy; civil assault; malicious prosecution; abuse of process; declaratory or injunctive relief, or in any other type of action or proceeding, whether known or unknown, suspected or unsuspected, fixed or contingent, at law or in equity, which Executive ever had or held, now has or holds, or hereafter can, shall, or may have or hold at any time in the future, in any capacity, individually or as a member of a class, collective or representative action, relator-employee, or action for public benefit with respect to Executive’s employment with Company, or the termination thereof, the subject matter of this Agreement, or any other matters with, by or between Company, or the Released Parties and Executive, or by any one or more of the Released Parties against Executive, at any time prior to and through the Effective Date of this Agreement. The Released Claims expressly exclude claims that may not be waived under applicable law at the time the Agreement is executed by Executive.

3. In consideration of the terms and provisions of the Agreement, Executive shall and does hereby and forever fully, finally and forever generally remise, release, waive and discharge Company and the Released Parties from any and all known or unknown, suspected or unsuspected, fixed or contingent claims, rights, actions and causes of action, including but not limited to the Released Claims, at law or in equity, which Executive ever had or held, now has or holds, or hereafter can, shall, or may have or hold against Company or any or all of the Released Parties based on any occurrences, transactions, events, acts, or omissions of any kind whatsoever from any time prior to and through the Effective Date of the Agreement.

4. Nothing in this Agreement prohibits Executive from: (a) filing an administrative charge of discrimination or an administrative charge within the jurisdiction of the National Labor Relations Board (“NLRB”) or Equal Employment Opportunity Commission (“EEOC”) or similar state or local civil rights agencies; (b) communicating directly with the U.S. Securities and Exchange Commission (“SEC”) about a possible securities law violation which Executive is not required to report or disclose to the Company; or (c) filing a charge or communicating with any other federal, state or local government office, official or agency concerning matters relevant to such governmental office or agency. Executive promises never to seek or accept any damages, remedies, or other relief, for Executive personally (any right to which Executive hereby waives and promises never to accept) with respect to any claim released hereunder, in any proceeding including, but not limited to, any EEOC or NLRB proceeding, other than a benefit or remedy pursuant to Section 922 of the Dodd-Frank Wall Street Reform or the Consumer Protection Act or as otherwise required by law. Notwithstanding the foregoing, this Agreement does not limit Executive’s right to receive an award for information provided to the SEC.

C. **Payment and Other Consideration**

1. **Separation Payment.**

a) In consideration of the releases and promises set forth in this Agreement:

i. the Company shall pay Executive the sum of \$342,342, representing an amount equal to one times Executive's Base Salary (as defined in the Employment Agreement), less all applicable withholdings, deductions and taxes as required by law (the "Separation Payment"), payable in semi-monthly installments over the twelve month period following the Separation Date in accordance with the Company's normal payroll practices; and

ii. the Company shall reimburse Executive for reasonable legal fees in an amount not to exceed \$10,000 that the Executive incurs in connection with the negotiation of this Agreement, subject to the delivery of appropriate documentation thereof and provided that the Executive shall submit invoices to the Company within thirty (30) days of incurrence of the expense.

b) The Separation Payment will be reported on an IRS Form W-2. Executive understands, acknowledges and agrees that the Separation Payment will be paid by the Company, provided: (a) Executive is not in breach of any term, condition, warranty, representation, covenant or provision of this Agreement, (b) Executive does not revoke the Agreement within the Revocation Period described in Section IX below; and (c) Executive first returns a signed and dated copy of this Agreement to the Company. Executive acknowledges that the Separation Payment to be provided under the terms of this Agreement is not an entitlement and shall serve as good and sufficient consideration of the promises made by Executive herein. Executive further acknowledges that the Separation Payment to be paid under this Agreement is due solely from the Company and that Insperity has no obligation to pay the Separation Payment even though its payment may be processed through Insperity.

2. **Outstanding Equity Awards.** The Executive's outstanding equity awards as of the Separation Date are set forth on Exhibit A to this Agreement. Executive understands and agrees that treatment of the Executive's outstanding equity awards will be governed by the terms and conditions of the applicable award agreements and the Xenetic Biosciences, Inc. Amended and Restated Equity Incentive Plan. Per the terms of the applicable stock option award agreements, all vested stock options as of the Separation Date may be exercised at any time during the three month period following the Separation Date, or through the option expiration date, as applicable, as set forth on Exhibit A. Executive's rights with respect to any unvested stock options are forfeited effective as of the Separation Date.

3. **Final Paycheck and Expenses.** Regardless of whether the Executive signs this Agreement, the Employee acknowledges and agrees that the Company has (a) paid the Executive for any accrued but unpaid portion of the Executive's Base Salary through the Separation Date, (b) reimbursed the Executive for reasonable out-of-pocket business expenses that were appropriately incurred by the Executive prior to the Separation Date in furtherance of the business of the Company, subject to the Company's applicable business expense reimbursement policy, and (c) paid the Executive an amount equal to any accrued but unused vacation pay as of the Separation Date.

4. **Benefits.** Following the Separation Date, Executive will be eligible to continue Executive's participation in the Company's group health benefit plans, such as they may exist from time-to-time, if and to the extent Executive was enrolled in such plans as of the Separation Date. Such benefits continuation will be provided concurrent with and in accordance with the terms of COBRA and/or applicable state/local benefits continuation laws. If Executive elects to receive such continued healthcare coverage, the Company shall reimburse Executive on a monthly basis for the premium for Executive and Executive's covered dependents, less the amount of Executive's monthly premium contributions for such coverage prior to termination, for the period commencing on the first day following the Separation Date through the earlier of (i) the last day of the month during the first twelve months following the Separation Date and (ii) the date Executive and Executive's covered dependents, if any, become eligible for healthcare coverage under another employer's plan(s). Executive shall notify the Company immediately if Executive becomes covered by a group health plan of a subsequent employer. If Executive does not elect COBRA, the Company has no obligation to pay any form of insurance coverage after the Separation Date. Executive further agrees and acknowledges that, except as specifically provided in this Agreement, Executive's participation in all Company employee benefit plans shall terminate as of the Separation Date.

5. **No Other Payments.** Executive expressly acknowledges and agrees that this Agreement provides Executive with compensation to which Executive would not otherwise be entitled. Executive acknowledges and agrees that Executive has been paid all final wages owed to Executive by Company, and that these monies were due and owing to Executive regardless of whether Executive chooses to execute the Agreement or not. Other than payment of the Separation Payment and other payments and benefits provided hereunder, Executive acknowledges that no other payments, including but not limited to those for back pay, front pay, salary, benefits, bonus, vacation or sick pay, civil or statutory penalties, general or compensatory damages, interest, or costs for the period of time Executive was employed by the Company, or for any other period, are due and owing to Executive from Company or the Released Parties.

D. Survival of Covenants

Executive agrees that the covenants with respect to non-competition, non-solicitation, confidentiality, inventions and return of property set forth in Sections 9 through 13 in the Employment Agreement shall survive the separation of Executive's employment with the Company and remain in full force and effect; provided, however, that for the sake of clarity, "Competing Products" as defined in Section 9(c)(i) of the Employment Agreement shall exclude (1) any use of polymers (including polysialic acid or PSA) in pharmaceutical product development so long as such use does not disclose or incorporate the Company's Confidential Information into research and development of any products, including pharmaceutical products; (2) work in the field of oncology therapeutics, excepting DNase-family enzymes as a component of oncology therapeutics, including combinations of DNase-family enzymes with chemotherapy, cell therapies, or immunotherapies, and provided such work does not disclose or incorporate the Company's Confidential Information into research and development of any products, including therapeutic products; and (3) work in the general area of cell therapies, including CAR T, so long as such work does not disclose or incorporate the Company's Confidential Information into research and development of any products, including therapeutic products.

E. Confidentiality and Nondisclosure of this Agreement

1. Executive acknowledges that the confidentiality and non-disclosure of all terms and conditions of this Agreement is an integral part of the agreement to pay severance benefits to Executive, and was a material inducement for Company to enter into this Agreement.

2. Executive agrees that Executive will maintain the terms of this Agreement in complete confidentiality. Executive shall make no comments, to any person or entity, including but not limited to the media, friends, co-workers, or former co-workers from Company regarding the Agreement, including the Separation Payment. For purposes of this Agreement, the word "comments" includes any form of communication, whether oral, written, electronic or otherwise. Executive acknowledges that these nondisclosure provisions are an integral part of this Agreement. Executive may disclose the terms of this Agreement to Executive's spouse, attorneys and tax preparer/accountants provided that such disclosure to the attorneys and tax preparer/accountants is made for the purposes of the attorneys and tax preparer/accountants providing legal and/or tax advice and provided that Executive's spouse, Executive's attorneys and tax preparer/accountants agree to be bound by this confidentiality section. Executive, if required by a Court order or subpoena, or as otherwise permitted by law, may disclose the terms of this Agreement without breaching these confidentiality provisions provided that in the event a demand is made upon Executive for the disclosure of the terms of the Agreement, Executive shall, within 48 hours immediately notify the Company of the demand, so that Company may have sufficient time to seek any necessary orders, including a protective order, or to otherwise participate in the tribunal's determination of the issue.

F. Waiver of Reemployment

Executive agrees that by executing this Agreement, Executive waives and releases forever any right or rights Executive might have to seek or obtain employment, reemployment, or reinstatement with Company or the Released Parties.

G. Return of Company Property, Log Ins and Passwords

In order to be eligible to receive the Separation Payment, immediately prior to the Effective Date, Executive must return to Company all Company property and all Company confidential information in Executive's possession, and Executive must provide to Company all log ins and passwords to any software, website, application or program, which Executive maintained and used as part of the performance of Executive's job duties and responsibilities.

III. Warranty of Capacity to Execute Agreement

Executive represents and warrants that no other person or entity has or has had any interest in the claims, demands, obligations or causes of action referred to in this Agreement; that Executive has the sole and exclusive right to receive sums specified in it; that Executive has not sold, assigned, transferred, conveyed or otherwise disposed of any of the claims, demands, obligations or causes of action referred to in this Agreement; and that Executive has the mental capacity to understand and execute the terms and conditions of the Agreement.

IV. Disclaimer of Liability

Executive agrees to indemnify and hold harmless Company and the Released Parties from any and all claims or liens presently existing against the Separation Payment hereby by any person, entity or corporation, as well as any attorneys' fees and costs incurred in representation of Company or the Released Parties in litigation concerning any claims or liens, including but not limited to any claims or liens for attorneys' fees and costs.

V. Entire Agreement & Successors in Interest

Except as otherwise provided herein, Executive agrees that this Agreement contains the entire agreement between Executive and Company with respect to the matters set forth in it, and shall be binding upon and inure to the benefit of Executive's executors, administrators, personal representatives, heirs, successors and assigns. There are no other understandings or agreements, verbal or otherwise, in relation thereto between the Parties, except as herein expressly set forth. There have been no representations not set forth herein that Executive has relied upon when entering into this Agreement. Executive agrees that should any provision of this Agreement require interpretation or construction that all Parties have participated in the drafting of this document and no presumption regarding construing the document against one Party shall apply.

VI. Severability

If any provision in this Agreement is found to be unenforceable, all other provisions will remain fully enforceable. The covenants set forth in this Agreement shall be considered and construed as separate and independent covenants. Should any part or provision of any provision of this Agreement be held invalid, void or unenforceable in any court of competent jurisdiction, such invalidity, voidness or unenforceability shall not render invalid, void or unenforceable any other part or provision of this Agreement.

VII. Governing Law

This Agreement is entered into in the Commonwealth of Massachusetts, and shall be construed and interpreted in accordance with its laws. The Parties agree that the proper and appropriate venue for any action arising from this Agreement shall be any court of competent jurisdiction in the Commonwealth of Massachusetts or of the United States of America for the District of Massachusetts.

VIII. Additional Documents

Executive agrees to cooperate fully, and execute any and all supplementary documents, and take all additional actions which may be necessary or appropriate to give full force and effect to the basic terms and intent of this Agreement.

IX. Acknowledgement of Voluntariness and Opportunity for Review and Revocation

1. Executive acknowledges that (a) Executive knowingly and voluntarily enters into this Agreement with the purpose of waiving any right and releasing any claims under the Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621, *et seq.* (“ADEA”); (b) Executive was given a period of up to twenty-one (21) days within which to review and consider this Agreement; (c) Executive understood Executive could use as much of said 21-day period as Executive desired; (d) Executive was encouraged by Company to consult with a lawyer, at Executive’s own expense; (e) if Executive decided not to use the 21-day period, Executive is signing this Agreement voluntarily and of Executive’s own free will; and (f) this Agreement is not final and binding until the seven-day period of revocation, described in the following sentences of this Section of the Agreement, has expired. Executive understands that Company would not have given Executive the special payments or benefits Executive is getting in exchange for this Agreement but for Executive’s promises and representations Executive is making by signing it.

2. Executive acknowledges that Executive may revoke Executive’s waiver of the rights and release of any ADEA (age discrimination) claims covered by this Agreement, by delivering written notice of Executive’s revocation of this Agreement to Jim Parslow at j.parslow@xeneticbio.com, no later than the close of business on the seventh (7th) calendar day after the date on which Executive signed this Agreement (the “Revocation Period”). The written notice of revocation must state: “I HEREBY REVOKE MY ACCEPTANCE OF THE CONFIDENTIAL SEPARATION AGREEMENT AND GENERAL RELEASE.” If the Agreement is revoked in a timely manner, this Agreement shall not be effective, and Executive shall not receive the Separation Payment as described in Section II.C. herein.

X. Effectiveness and Electronic Signatures

This Agreement shall become effective following execution by all the Parties (“Effective Date”). This Agreement may be executed via manual signature or electronic signature. “Electronic signature” means (a) the signing party’s manual signature, converted by the signing party to facsimile or industry-accepted digital form (such as a .pdf file) and received from the signing party’s customary email address, customary facsimile number, or other mutually agreed-upon authenticated source; or (b) the signing party’s digital signature executed using a mutually agreed-upon digital signature service provider, such as DocuSign or Adobe sign, and digital signature process. Each Party to this Agreement (i) agrees that it will be bound by its own electronic signature, (ii) accepts the electronic signature of each other Party to this Agreement, and (iii) agrees that such electronic signatures shall be the legal equivalent of manual signatures. This Agreement may be so executed in counterparts, each of which will be considered an original and all such counterparts will be considered and constitute one and the same agreement.

XI. Disparaging Statements

Neither the Executive nor the Company shall make any remarks or statements, either publicly or privately, orally or in writing, that are disparaging of the other party. The Executive shall not make any remarks or statements, either publicly, orally or in writing that are disparaging of the Company’s actual or prospective business and/or, in such capacities, current or former employees, officers, directors, trade partners, vendors, suppliers, or customers of the Company, either individually or collectively. For the avoidance of doubt, this includes remarks or statements, public or private, made via electronic mail, blogs, social media (such as, Facebook, Twitter or X, LinkedIn, Instagram or any other similar platform). This provision is subject to each party’s legally protected rights to communicate with governmental bodies and agencies and to engage in otherwise legally protected activity.

[remainder of page intentionally blank]

EMPLOYEE:

/s/ Curtis Lockshin
Curtis Lockshin
Date: June 19, 2024

COMPANY:

Xenetic Biosciences, Inc.

By: /s/ James Parslow
Name: James Parslow
Title: Interim Chief Executive Officer and Chief Financial Officer
Date: June 19, 2024

[Signature page to Separation and Release Agreement]

Exhibit A

Xenetic Biosciences, Inc.

Curtis Lockshin – Outstanding Equity as of May 16, 2024

Date of Grant	Shares	Exercise Price	Expiration Date	Total Vested	Total Unvested & Forfeited as of May 16, 2024	Vesting	Exercisability post termination
12/31/2014	122	\$ 550.80	12/31/2024	122	-	Fully Vested	90-days post termination
9/6/2015	127	\$ 550.80	9/6/2025	127	-	Fully Vested	10-years from grant date (9/6/25)
1/1/2017	1,459	\$ 516.00	1/1/2027	1,459	-	Fully Vested	90-days post termination
12/4/2019	9,000	\$ 13.10	12/4/2029	9,000	-	Fully Vested	90-days post termination
3/18/2021	5,000	\$ 26.00	3/18/2031	5,000	-	1/3rd on March 18, 2022; 2/3rds over remaining 8 quarters commencing June 18, 2022 thru March 18, 2024	90-days post termination
3/24/2022	5,000	\$11.20	3/24/2032	3,333	1,667	1/3rd on March 24, 2023; 2/3rds over remaining 8 quarters commencing June 24, 2023 thru March 24, 2025	90-days post termination
12/11/2023	10,000	\$3.88	12/11/2033	-	10,000	1/3rd on December 11, 2024; 2/3rds over remaining 8 quarters commencing March 11, 2025 thru Dec 11, 2026	90-days post termination

**AMENDMENT TO
EMPLOYMENT AGREEMENT**

This Amendment (the "Amendment") to the Employment Agreement dated as of March 23, 2017 (the "Agreement"), between XENETIC BIOSCIENCES, INC., a Nevada corporation (the "Company"), and JAMES F. PARSLow (the "Executive") is dated as of June 18, 2024 (the "Execution Date"), and effective as of May 16, 2024 (the "Amendment Effective Date"). Capitalized terms used herein and not otherwise defined shall have the meaning set forth in the Agreement.

The Company and Executive desire to enter into this Amendment to the Agreement and hereby agree to the following as of the Amendment Effective Date:

1. Section 2(a) of the Agreement is hereby amended by adding the following immediately following the last sentence:

“Effective as of the Amendment Effective Date, the Executive (i) shall serve as Interim Chief Executive Officer, on an interim basis, and shall continue to serve as the Chief Financial Officer of the Company, with responsibilities, duties and authority customary for each of such positions, subject to direction by the Company’s Board of Directors (“Board”), and (ii) shall report directly to the Board; provided, however, that in the event that the Executive is not selected by the Board to be the Chief Executive Officer following the interim period, the Executive shall continue to serve as Chief Financial Officer with responsibilities, duties and authority customary for such position, subject to the direction by the Company’s Chief Executive Officer and shall report directly to the Chief Executive Officer.”
2. Section 3(a) of the Agreement is hereby amended by replacing the Base Salary referenced therein with “\$400,000”, which change was effective as of the Amendment Effective Date.
3. A new Section 3(f) is hereby added to the Agreement as follows:

“(f) Retention Bonus. Executive will be eligible to receive a retention bonus (the “Retention Bonus”) totaling \$100,000, less payroll deductions and all required withholdings, if Executive remains employed with the Company on the ten month anniversary of the Amendment Effective Date, or March 16, 2025 (the “Retention Bonus Date”); provided, that in the event the Company terminates Executive’s employment Without Cause prior to the Retention Bonus Date, Executive shall be entitled to receive the Retention Bonus. If earned, the Retention Bonus shall be paid in the next payroll period following the Retention Bonus Date in accordance with the customary payroll practices of the Company in effect at such time.”
4. A new Section 5(c) is hereby added to the Agreement as follows:

“(c) Retention Option. The Company shall grant to Executive on the Execution Date a stock option to purchase 20,000 shares of common stock of the Company (the “Retention Option”) under the Amended and Restated Xenetic Biosciences, Inc. Equity Incentive Plan, as amended from time to time (the “Plan”) at an exercise price equal to the fair market value of the Company’s common stock on the grant date (i.e., the Execution Date). The Retention Option shall vest one-fourth on the grant date, one-fourth upon the first anniversary of the Execution Date, one-fourth upon the second anniversary of the Execution Date and one-fourth upon the third anniversary of the Execution Date, provided the Executive remains employed with the Company on the applicable vesting date. The Retention Option shall be evidenced in writing by, and subject to the terms and conditions of, the Plan, and, except as otherwise set forth herein, the Company’s standard form of stock option agreement, which agreement shall expire ten (10) years from the date of grant except as otherwise provided herein, in the stock option agreement or the Plan. Executive agrees that he will not loan or pledge any securities of the Company owned by him or which he may accrue in the future through Stock Options or other equity awards as collateral for any indebtedness.”
5. The Executive acknowledges and agrees that the change in title described in Section 2(a) is on an interim basis and further acknowledges and agrees that any further changes to Executive’s title in the event the Executive is not chosen as the Company’s Chief Executive Officer after an interim period, and any related changes in duties and other actions of the Company, does not and shall not constitute “Good Reason” as defined in the Agreement.
6. All other provisions of the Agreement not amended hereby shall remain in full force and effect.

[Signature pages follow]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment under seal as of the date and year first above written.

XENETIC BIOSCIENCES, INC.

By: /s/ Adam Logal

Name: Adam Logal

Title Chairman of the Board of Directors

Accepted and Agreed to:

/s/ James F. Parslow
James F. Parslow

[Amendment to Employment Agreement]

I, James Parslow, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Xenetic Biosciences, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2024

By: /s/ JAMES PARSLOW
James Parslow
Interim Chief Executive Officer
(Principal Executive Officer)

I, James Parslow, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Xenetic Biosciences, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2024

By: /s/ JAMES PARSLOW
James Parslow
Chief Financial Officer
(Principal Financial and Principal Accounting Officer)

CERTIFICATION

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), James Parslow, Interim Chief Executive Officer and Chief Financial Officer of the Xenetic Biosciences, Inc. (the “Company”) hereby certifies that, to the best of his knowledge:

The Company’s Quarterly Report on Form 10-Q for the period ended June 30, 2024, to which this Certification is attached as Exhibit 32.1 (the “Periodic Report”), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 13, 2024

IN WITNESS WHEREOF, the undersigned have set their hands hereto as of the 13th day of August 2024.

/s/James Parslow

James Parslow
Interim Chief Executive Officer and Chief Financial Officer
(Principal Executive Officer and Principal Financial Officer)

“This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Xenetic Biosciences, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.”