

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

Form 10-K/A
Amendment No. 1

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.
For the fiscal year ended December 31, 2024

TRANSITION REPORTS 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 (Zip code))

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

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

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

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act: Yes No

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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

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

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant as of June 28, 2024, the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing price of the registrant's common stock on the Nasdaq Capital Market on that date of \$4.07, was approximately \$5,301,818. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors or 10% beneficial owners are, in fact, affiliates of the registrant.

As of April 18, 2025, the number of outstanding shares of the registrant's common stock was 1,542,139.

DOCUMENTS INCORPORATED BY REFERENCE

None

EXPLANATORY NOTE

The Registrant is filing this Amendment No. 1 on Form 10-K/A (this “Amendment”) to amend its Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024, originally filed with the Securities and Exchange Commission (“SEC”) on March 18, 2025 (the “Original Filing”), to include the information required by Items 10 through 14 of Part III of Form 10-K. This information was previously omitted from the Original Filing in reliance on General Instruction G(3) to Form 10-K, which permits the information in the above-referenced items to be incorporated in the Form 10-K by reference from our definitive proxy statement if such statement is filed no later than 120 days after our fiscal year-end. We are filing this Amendment to include Part III information in our Form 10-K because our definitive proxy statement will be filed later this year.

Part III of the Original Filing (Items 10 through 14) is being amended and restated in its entirety by this Amendment. In addition, pursuant to Rule 12b-15 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), Part IV, Item 15 of the Original Filing is being amended to contain the currently dated certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, which are attached hereto as Exhibit 31.3 and Exhibit 31.4, respectively. Because no financial statements are included in this Amendment and this Amendment does not contain or amend any disclosure with respect to Items 307 and 308 of Regulation S-K, paragraphs 3, 4, and 5 of the certifications have been omitted. Further, we are amending the cover page to update the number of shares of our stock outstanding and to remove the statement that information is being incorporated by reference from our definitive proxy statement.

Except as described above, this Amendment does not amend or otherwise update any other information in the Original Filing. Accordingly, this Amendment should be read in conjunction with the Original Filing. In addition, this Amendment does not reflect events that may have occurred subsequent to the date of the Original Filing.

As used in this Amendment, unless otherwise indicated, all references herein to “Xenetic,” the “Company,” “we” or “us” refer to Xenetic Biosciences, Inc. and its wholly owned subsidiaries.

XENETIC BIOSCIENCES, INC.
2024 ANNUAL REPORT ON FORM 10-K

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PART III

ITEM 10 – DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Directors and Executive Officers

Set forth below is the name, age, position and brief biographies of each of our executive officers and directors as of April 18, 2025.

Name	Age	Position
Mr. James Parslow	60	Interim Chief Executive Officer, Chief Financial Officer and Corporate Secretary
Dr. Grigory Borisenko	56	Director ⁽¹⁾
Mr. Firdaus Jal Dastoor, FCS	72	Director ^{(1), (2), (3)}
Dr. Dmitry Genkin	56	Director
Dr. Roger Kornberg	77	Director ⁽³⁾
Mr. Moshe Mizrahy	72	Director
Dr. Alexey Vinogradov	54	Director ^{(1), (2)}

(1) Member of the Audit Committee

(2) Member of the Compensation Committee

(3) Member of the Nominating and Corporate Governance Committee

James Parslow was appointed our interim Chief Executive Officer on May 16, 2024, and has served as our Chief Financial Officer since April 3, 2017. Mr. Parslow most recently served as Chief Financial Officer, Treasurer and Secretary of World Energy Solutions, Inc., a publicly-traded business-to-business e-commerce company brokering energy and environmental commodities, from 2006 until its acquisition by EnerNOC, Inc. in 2015. From 2015 until 2017, he served as an independent consultant providing interim chief financial officer services to multiple emerging technology companies. Mr. Parslow is a Certified Public Accountant with over 35 years of experience serving private and public companies in the biotech, clean tech, e-commerce, and high-tech manufacturing industries. He holds an A.B. in Economics and Accounting from the College of the Holy Cross and an M.B.A. with a concentration in Finance from Bentley University.

Grigory Borisenko, PhD has served as a member of our Board since 2019. Dr. Borisenko has over 25 years of scientific, management and strategic experience in the life science field. Since April 2022, Dr. Borisenko has been an independent consultant for a number of companies. Prior to that time, Dr. Borisenko served as an Investment Director of an eastern European venture capital and private equity management fund, and has specialized in investment projects in life sciences for over ten years. Dr. Borisenko served on the board of directors of multiple biotechnology companies including Atea Pharmaceuticals, Inc. and Adastral Pharmaceuticals, Inc. Currently, Dr. Borisenko provides consulting and investment advising services in the biotech area. Prior to his investment career, Dr. Borisenko held academic appointments with the University of Pittsburgh and co-authored over fifty peer-reviewed publications in leading biochemistry and cell biology journals. Dr. Borisenko received his M.S. and Ph.D. from the Pirogov State Medical University, accomplished postdoctoral training at the University of Pittsburgh and is a recipient of Fogarty International and International Fellowship Awards from NIH and WHO. We believe Dr. Borisenko's extensive background in the life sciences and biotechnology industries provide him with the appropriate set of skills to serve as a member of our Board.

Firdaus Jal Dastoor, FCS has served as a member of our Board since January 2014 pursuant to terms of the agreement of our acquisition of Xenetic U.K. He has been employed by the Cyrus Poonawalla Group, a conglomerate in India with interests in horse breeding, biotech and life sciences, and financial services, in business development strategies and operational roles since October 1981. Mr. Dastoor is currently a Group Director in charge of Finance and Corporate Affairs and Company Secretary of the Serum Institute of India Private Limited at the Cyrus Poonawalla Group. He has been a Fellow Member of The Institute of Company Secretaries of India since 1990. Mr. Dastoor is on the board of several private companies operating in the fields of life sciences and biotech, international trade, financial services and quality standards certifications. Mr. Dastoor received a B.A. in Commerce from the University of Poona. We believe Mr. Dastoor's knowledge of investments in the life sciences and biotechnology industries, and his finance and business development background provide him with the appropriate set of skills to serve as a member of our Board.

Dmitry Genkin, MD has served as a current member of our Board since December 2023. Dr. Genkin previously served on the Company's Board of Directors from 2017-2021. He studied drug delivery under Professor Gregory Gregoriadis at The School of Pharmacy, University of London, as well as at the Department of Clinical Pharmacology at Karolinska Hospital, Stockholm. Since 2005, Dr. Genkin has served as Executive Chairman of PJSC Pharmsynthez, a stockholder of Xenetic. Dr. Genkin is founder and board member of Santerus AG – a Swiss private therapeutic medical device company developing novel apheresis therapies for extracorporeal removal of NETs. Dr. Genkin is on the board of CLS Therapeutics Inc. and Peri-Ness Ltd. – private biotechnology companies developing anti-NETosis therapies. Dr. Genkin is the inventor of more than 20 patents and patent applications in the field of therapeutics targeting of NETosis and cell free DNA. We believe Dr. Genkin's significant life sciences, biotechnology and international background provide him with the appropriate set of skills to serve as a member of our Board.

Roger Kornberg, PhD has served as a member of our Board since February 2016. Dr. Kornberg is a member of the U.S. National Academy of Sciences and the Winzer Professor of Medicine in the Department of Structural Biology at Stanford University. He earned his B.S. in chemistry from Harvard University in 1967 and his Ph.D. in chemical physics from Stanford in 1972. He became a postdoctoral fellow at the Laboratory of Molecular Biology in Cambridge, England and then an assistant professor of biological chemistry at Harvard Medical School in 1976, before moving to his present position as professor of structural biology at Stanford Medical School in 1978. In 2006, Dr. Kornberg was awarded the Nobel Prize in Chemistry in recognition for his studies of the molecular basis of Eukaryotic Transcription, the process by which DNA is copied to RNA. Dr. Kornberg is also the recipient of several awards, including the 2001 Welch Prize, the highest award granted in the field of chemistry in the United States, and the 2002 Leopold Mayer Prize, the highest award granted in the field of biomedical sciences from the French Academy of Sciences. Dr. Kornberg has served as a director of Cocrystal Pharma, Inc. (NasdaqCM: COCP) since April 2020. We believe Dr. Kornberg's prior experience serving on the boards of directors of large organizations as well as his scientific background provides him with the appropriate set of skills to serve as a member of our Board.

Moshe Mizrahy has served as a member of our Board since December 2023. Mr. Mizrahy is co-founder of InMode Ltd. (NASDAQ: INMD) and has served as its Chief Executive Officer and Chairman of its board of directors since its inception in 2008. Prior to that, Mr. Mizrahy was co-founder and chief executive officer of Syneron Medical Ltd. Mr. Mizrahy was also the former chief executive officer of Home Skinovations Ltd., and is currently chairman of its board. In addition to Home Skinovations Ltd., Mr. Mizrahy currently sits on the board of directors of SipNose Ltd., Pet Novations Ltd., Peri-Ness Technologies Ltd., Santerus AG, Easy-Lap Ltd., O.B.-Tools Ltd., Urifer Ltd., Easy Notes Ltd., Escape Rescue Systems Ltd., M.N. Business Strategy Ltd., Silk'n Cure Ltd., Himalaya Family Office Advising Ltd. and Polimer Logistics (Israel) Ltd. Mr. Mizrahy is co-founder and general partner of Nitzanim AVX Kyocera Venture Capital Fund and First Israel Mezzanine Investors Fund. Mr. Mizrahy has expertise in value creation for medical technologies, fundraising, public offerings, marketing and regulatory affairs. Mr. Mizrahy has a B.S. in Engineering from the Tel Aviv University and an MBA from Pace University, New York. We believe Dr. Mizrahy's executive leadership background provide him with the appropriate set of skills to serve as a member of our Board.

Alexey Vinogradov has served as a member of our Board since July 2019. Dr. Vinogradov currently works as Business Development Manager at Mag. Peter G. Wahl's Law Firm in Vienna, Austria, which focuses on corporate, property and commercial law. Dr. Vinogradov has extensive experience in business development. From 2017 to 2022 he worked as a Business Development Director and Operations Director at Cantreva LLC, providing services in the field of renewable energy sources (solar, wind, hydropower). Previously, from 2015 to 2017, Dr. Vinogradov held the executive position at Togas Middle East LLC in Dubai, UAE. Dr. Vinogradov is a member of the board of PJSC Pharmsynthez a shareholder of Xenetic. We believe Mr. Vinogradov's experience in business communication, international business development and financial analytics provides him with the appropriate set of skills to serve as a member of our Board.

There are no family relationships among any of our directors and executive officers and, to the best of our knowledge, none of our directors or executive officers has, during the past ten years, been involved in any legal proceedings which are required to be disclosed pursuant to the rules and regulations of the SEC.

Board Role in Risk Oversight and Board Leadership

Our management is principally responsible for defining the various risks facing the Company, formulating risk management policies and procedures, and managing our risk exposures on a day-to-day basis. The Board's principal responsibility in this area is to ensure that sufficient resources, with appropriate technical and managerial skills, are provided throughout the Company to identify, assess and facilitate processes and practices to address material risk and to monitor our risk management processes by informing itself concerning our material risks and evaluating whether management has reasonable controls in place to address the material risks. The involvement of the Board in reviewing our business strategy is an integral aspect of the Board's assessment of management's tolerance for risk and its determination of what constitutes an appropriate level of risk for the Company.

We separate the roles of Chief Executive Officer and Board Chair in recognition of the differences between the two roles. The Board of Directors is currently chaired by director, Dmitry Genkin, and our Interim Chief Executive Officer, James Parslow, is not a member of our Board of Directors. Prior to December 11, 2024 the Board of Directors was chaired by independent director, Adam Logal, and, prior to May 17, 2024, our Chief Executive Officer was Jeffrey Eisenberg, our only employee-director. The Chief Executive Officer is responsible for setting the strategic direction for the Company and the day to day leadership and performance of the Company, while the Board Chair is responsible for leading the Board in the execution of its fiduciary duties. The Board Chair presides over meetings of the full Board. While we recognize that different board leadership structures may be appropriate for companies in different situations, we believe our current leadership structure is the optimal structure for the Company at this time.

Our Board of Directors

During fiscal year 2024, the following served as a member of the Company's Board of Directors: Jeffrey Eisenberg, Dr. Grigory Borisenko, Dr. James Callaway, Firdaus Jal Dastoor, Dr. Dmitry Genkin, Dr. Roger Kornberg, Adam Logal, Mr. Moshe Mizrahy and Alexey Vinogradov. On May 16, 2024, Mr. Eisenberg resigned as a member of the Board. On October 29, 2024, the Directors voted to set the size of the Board to six members. On December 11, 2024, Dr. Callaway and Mr. Logal were not re-elected to the Board of Directors at the Company's annual shareholder meeting. Directors shall hold office for a one-year term or until their successors have been duly elected and qualified. Vacancies on the Board resulting from death, resignation, disqualification, removal, or other causes can be filled by the affirmative vote of a majority of the directors then in office. Any director so elected, shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been duly elected and qualified.

Committees of the Board

The Board has three standing committees: an Audit Committee, a Compensation Committee, and a Nominating and Corporate Governance Committee. The Board also has two special committees: the Special Committee, which was formed on January 16, 2024, and the Financing Committee, which was formed in August 2020. The Company has adopted charters to govern the conduct, authority and responsibilities of each of the Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee, which are available to stockholders on the Company's website at <http://ir.xeneticbio.com/>. The information on our website is not incorporated by reference into, or a part of, this Amendment or the Original Filing.

Audit Committee

The Audit Committee of the Board of Directors was established by the Board in accordance with Section 3(a)(58)(A) of the Exchange Act to oversee the Company's corporate accounting and financial reporting processes and audits of its financial statements. For this purpose, the Audit Committee performs several functions. The Audit Committee evaluates the performance of and assesses the qualifications of the independent auditors; determines and approves the engagement of the independent auditors; determines whether to retain or terminate the existing independent auditors or to appoint and engage new independent auditors; reviews and approves the retention of the independent auditors to perform any proposed permissible non-audit services; monitors the rotation of partners of the independent auditors on the Company's audit engagement team as required by law; reviews and approves or rejects transactions between the Company and any related persons; confers with management and the independent auditors regarding the effectiveness of internal control over financial reporting; establishes procedures, as required under applicable law, for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters and the confidential and anonymous submission by employees of concerns regarding questionable accounting or auditing matters; and meets to review the Company's annual audited financial statements and quarterly financial statements with management and the independent auditor, including a review of the Company's disclosures under the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of the Company's Annual Report to Stockholders on Form 10-K.

For the fiscal year 2024, the Audit Committee was composed of three directors. Prior to December 11, 2024, the Audit Committee was composed of Mr. Dastoor, Dr. Callaway, and Mr. Logal (chair). Subsequent to December 11, 2024, the Audit Committee was composed of Mr. Dastoor (chair), Dr. Borisenko and Dr. Vinogradov. The Audit Committee met seven times during fiscal year 2024. The Board has adopted a written Audit Committee charter that is available to stockholders on the Company's website at <http://ir.xeneticbio.com/>. The information on our website is not incorporated by reference into, or a part of, this Amendment or the Original Filing.

The Board of Directors reviews the Nasdaq Stock Market LLC ("Nasdaq") listing standards definition of independence for Audit Committee members on an annual basis and has determined that all current members of our Audit Committee are independent (as independence is currently defined in Rule 5605(c)(2)(A)(i) and (ii) of the Nasdaq listing standards).

The Board of Directors determined that Mr. Dastoor qualifies as an "audit committee financial expert," as defined in applicable SEC rules. The Board made a qualitative assessment of Mr. Dastoor's level of knowledge and experience based on a number of factors, including his formal education and experience as group director-finance.

Director Nominations

No material changes have been made to the procedures by which stockholders may recommend nominees to our Board.

Code of Business Conduct and Ethics

We have adopted the Xenetic Biosciences, Inc. Code of Business Conduct and Ethics that applies to all of our employees, officers and directors, including our principal executive officer, principal financial officer and principal accounting officer. The Code of Business Conduct and Ethics is available on our website, www.xeneticbio.com, under "Investors" at "Corporate Governance." If we make any substantive amendments to the Code of Business Conduct and Ethics or grant any waiver from a provision of the Code of Business Conduct and Ethics to any executive officer or director, we intend to promptly disclose the nature of the amendment or waiver on our website, to the extent required by the applicable rules and exchange requirements. The information on our website is not incorporated by reference into, or a part of, this Amendment or the Original Filing.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who own more than ten percent of a registered class of our equity securities, to file with the SEC initial reports of ownership and reports of changes in ownership of our ordinary shares and other equity securities. Such persons are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file.

To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required, during the fiscal year ended December 31, 2024, we believe that all Section 16(a) filing requirements applicable to our executive officers, directors and greater than 10% beneficial owners were complied with, except for the following: Dr. Genkin has not yet filed the initial Form 3 since his election to the Board.

Insider Trading Policy

We have adopted an insider trading policy and procedures governing the purchase, sale and other dispositions of the Company's securities that applies to all of the Company's directors, officers, employees and certain designated consultants. We believe our insider trading policy is reasonably designed to promote compliance with insider trading laws, rules and regulations, and listing standards applicable to the Company. A copy of Xenetic's insider trading policy and procedures was filed as Exhibit 19.1 to the Original Filing.

ITEM 11 – EXECUTIVE COMPENSATION

Summary Compensation Table – 2023 - 2024

The following table sets forth, for the years ended December 31, 2024 and 2023, the compensation information for James Parslow, our Interim Chief Executive Officer and Chief Financial Officer, Jeffrey Eisenberg, our former Chief Executive Officer and Dr. Curtis Lockshin, our former Chief Scientific Officer. We refer to Messrs. Parslow, Eisenberg, and Lockshin herein, collectively, as our “named executive officers.”

Name and Principal Position	Year	Salary (\$)	Option Awards ⁽¹⁾ (\$)	Non-Equity Incentive Plan Compensation ⁽²⁾ (\$)	All Other Compensation (\$)	Total (\$)
James Parslow, <i>Interim Chief Executive Officer & Chief Financial Officer</i>	2024	\$ 378,378	\$ 67,280	\$ –	\$ 35,510 ⁽³⁾	\$ 481,168
	2023	\$ 329,175	\$ 33,932	\$ 33,411	\$ 37,214	\$ 433,732
Jeffrey F. Eisenberg, <i>Former Chief Executive Officer</i>	2024	\$ 201,843	\$ –	\$ –	\$ 471,300 ⁽⁴⁾	\$ 673,143
	2023	\$ 404,250	\$ 67,863	\$ 58,617	\$ 32,764	\$ 563,494
Dr. Curtis Lockshin, <i>Former Chief Scientific Officer</i>	2024	\$ 166,992	\$ –	\$ –	\$ 387,091 ⁽⁵⁾	\$ 554,083
	2023	\$ 329,175	\$ 33,932	\$ 33,411	\$ 39,298	\$ 435,816

(1) The amounts represent the aggregate grant date fair value of stock options granted in the applicable fiscal year, computed in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 718, excluding the effect of estimated forfeitures. Assumptions used in the calculation of this amount are set forth in Note 10 to our audited consolidated financial statements included in Item 8 of the Original Filing. Mr. Parslow was granted options to purchase 20,000 shares during 2024.

(2) Represents incentive compensation payments earned.

(3) Includes \$21,710 for health and welfare plans and \$13,800 employer matching 401(k) contribution. Does not include a retention bonus earned in 2025 as further described within [“Employment Agreements with our Named Executive Officers”](#) below.

(4) Includes \$454,559 of severance related to salary and benefit continuation as further described within [“Employment Agreements with our Named Executive Officers”](#) below, \$8,090 for health and welfare plans and \$8,651 employer matching 401(k) contribution.

(5) Includes \$369,994 of severance related to salary and benefit continuation as further described within [“Employment Agreements with our Named Executive Officers”](#) below, \$10,625 for health and welfare plans and \$6,472 employer matching 401(k) contribution.

401(k) Plan

The Company provides all full-time employees, including our named executive officers, with the opportunity to participate in a defined contribution 401(k) plan. Our 401(k) plan is intended to qualify under Section 401 of the Internal Revenue Code so that employee pre-tax contributions and income earned on such contributions are not taxable to employees until withdrawn. Employees may elect to defer up to 80 percent of their eligible compensation (not to exceed the statutorily prescribed annual limit) in the form of elective deferral contributions to our 401(k) plan. Our 401(k) plan also has a “catch-up contribution” feature for employees aged 50 or older (including those who qualify as “highly compensated” employees) who can defer amounts over the statutory limit that applies to all other employees. The 401(k) plan matches 100% of employee contributions up to a maximum of 4% of employees’ salary. Matching contributions are fully vested at the time of contribution.

Outstanding Equity Awards at Fiscal Year-End – 2024

The following table sets forth certain information with respect to outstanding equity awards held by our named executive officers at December 31, 2024.

Name	Option Awards				Stock Awards	
	Number of Securities Underlying Unexercised Options, Exercisable	Number of Securities Underlying Unexercised Options, Unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested	Market Value of Shares or Units of Stock That Have Not Vested (\$)
James Parslow	1,459 ⁽¹⁾	–	548.40	4/3/2027	–	–
	8,000 ⁽²⁾	–	13.10	12/4/2029	–	–
	5,000 ⁽³⁾	–	26.00	3/18/2031	–	–
	4,583 ⁽⁴⁾	417 ⁽⁴⁾	11.20	3/24/2032	–	–
	3,333 ⁽⁵⁾	6,667 ⁽⁵⁾	3.88	12/11/2033	–	–
	5,000 ⁽⁶⁾	15,000 ⁽⁶⁾	3.99	6/18/2034	–	–
Jeffrey F. Eisenberg	1,042 ⁽⁷⁾	–	253.20	5/16/2025	–	–
	23,000 ⁽⁸⁾	–	13.10	5/16/2025	–	–
	10,000 ⁽⁹⁾	–	26.00	5/16/2025	–	–
	10,000 ⁽¹⁰⁾	–	11.20	5/16/2025	–	–
	20,000 ⁽¹¹⁾	–	3.88	5/16/2025	–	–
Curtis Lockshin	127 ⁽¹²⁾	–	550.80	9/6/2025	–	–

(1) Vested one-third upon the first anniversary of the grant date, one-third upon the second anniversary of the grant date and one-third upon the third anniversary of the grant date.

(2) Vested one-third upon the first anniversary of the grant date, one-third upon the second anniversary of the grant date and one-third upon the third anniversary of the grant date.

(3) Vested one-third upon the first anniversary of the grant date and the remaining two-thirds over eight equal quarterly installments commencing June 18, 2022 and ending on March 18, 2024.

(4) Vests one-third upon the first anniversary of the grant date and the remaining two-thirds over eight equal quarterly installments commencing June 24, 2023 and ending on March 24, 2025.

(5) Vests one-third upon the first anniversary of the grant date and the remaining two-thirds over eight equal quarterly installments commencing March 11, 2025 and ending on December 11, 2026.

(6) Vests one-fourth upon grant date, one-fourth on the first anniversary of the grant date, one-fourth upon the second anniversary of the grant date and one-fourth upon the third anniversary of the grant date.

(7) Vested one-third upon the first anniversary of the grant date, one-third upon the second anniversary of the grant date and one-third upon the third anniversary of the grant date.

(8) Vested one-third upon the first anniversary of the grant date, one-third upon the second anniversary of the grant date and one-third upon the third anniversary of the grant date.

(9) Vested one-third upon the first anniversary of the grant date and the remaining two-thirds over eight equal quarterly installments commencing June 18, 2022 and ending on March 18, 2024.

(10) Fully vested upon termination of employment.

(11) Fully vested upon termination of employment.

(12) Vested one-third upon the first anniversary of the grant date, one-third upon the second anniversary of the grant date and one-third upon the third anniversary of the grant date.

Pay Versus Performance Disclosure

The following tables and related disclosures provide information about (i) the “total compensation” of our CEO, and our other named executive officers (the “Other NEOs” or the “Non-CEO NEOs”) as presented in the Summary Compensation Table within this proxy statement, (ii) the “compensation actually paid” to our CEO and our Other NEOs, as calculated pursuant to the SEC’s pay-versus-performance rules, (iii) certain financial performance measures, and (iv) the relationship of the “compensation actually paid” to those financial performance measures.

This disclosure has been prepared in accordance with Item 402(v) of Regulation S-K under the Securities Exchange Act of 1934, as amended, and does not necessarily reflect value actually realized by the executives or how our compensation committee evaluates compensation decisions in light of company or individual performance.

Year	Summary Compensation Table Total for CEO ⁽¹⁾ (\$)	Compensation Actually Paid to CEO ⁽¹⁾⁽²⁾⁽³⁾ (\$)	Summary Compensation Table Total for Former CEO ⁽¹⁾ (\$)	Compensation Actually Paid to Former CEO ⁽¹⁾⁽²⁾⁽³⁾ (\$)	Value of Initial Fixed \$100 Investment Based on Total Shareholder Return ⁽⁴⁾ (\$)	Net Loss (\$)
2024	\$ 481,168	\$ 469,659	\$ 673,144	\$ 622,644	\$ 30.93	\$ (3,960,275)
2023	\$ –	\$ –	\$ 563,494	\$ 560,385	\$ 16.91	\$ (4,134,578)
2022	\$ –	\$ –	\$ 632,827	\$ 425,619	\$ 13.98	\$ (6,552,353)

Year	Average Summary Compensation Table for Non-CEO NEOs ⁽¹⁾ (\$)	Average Compensation Actually Paid to Non-CEO NEOs ⁽¹⁾⁽²⁾⁽³⁾ (\$)	Value of Initial Fixed \$100 Investment Based on Total Shareholder Return ⁽⁴⁾ (\$)	Net Loss (\$)
2024	\$ 554,083	\$ 521,224	\$ 30.93	\$ (3,960,275)
2023	\$ 434,774	\$ 433,219	\$ 16.91	\$ (4,134,578)
2022	\$ 472,180	\$ 377,162	\$ 13.98	\$ (6,552,353)

(1) Effective May 16, 2024, James Parslow was appointed Interim CEO. Prior to that time, Jeffrey Eisenberg was the CEO for 2024, 2023 and 2022. The Non-CEO NEOs for whom average compensation is presented in this table for 2024 is Dr. Curtis Lockshin. The Non-CEO NEOs for whom average compensation is presented in this table for 2023 and 2022 are James Parslow and Dr. Curtis Lockshin.

(2) The amounts shown as Compensation Actually Paid have been calculated in accordance with Item 402(v) of Regulation S-K and do not reflect compensation actually realized or received by the Company’s NEOs. These amounts reflect total compensation as set forth in the Summary Compensation Table for each year, adjusted as described in footnote 3 below.

(3) Compensation Actually Paid reflects the exclusions and inclusions for the CEO and the Non-CEO NEOs set forth below. Amounts excluded, which are set forth in the table below in the “Minus Stock and Option Awards from Summ. Comp. Table” columns below, represent the Stock Awards and Option Awards reported in the Stock Awards and Option Awards columns of the Summary Compensation Table for each applicable year. Amounts added back to determine Compensation Actually Paid are made up of the following components as applicable: (i) the fair value as of the end of the fiscal year of outstanding and unvested equity awards granted in that year; (ii) the change in fair value during the year of equity awards granted in prior years that remained outstanding and unvested at the end of the year; (iii) the fair value as of the vesting date of equity awards that were granted and vested in that year, if any and (iv) the change in fair value during the year through the vesting date of equity awards granted in prior years that vested during that year. The fair value at the end of the prior year of awards granted in any prior year that failed to meet applicable vesting conditions during the covered year are subtracted in 2024. There were no such awards that failed to meet applicable vesting conditions for the CEOs or the Non-CEO NEOs in 2022 or 2023. Equity values are calculated in accordance with ASC Topic 718.

<u>Year</u>	<u>Summary Comp. Table Total for CEO</u>	<u>Minus Stock and Option Awards from Summ. Comp. Table</u>	<u>Plus Year-End Equity Value of Unvested Awards Granted During Year</u>	<u>Plus Change in Value of Unvested Awards Granted in Prior Years</u>	<u>Plus Change in Value of Unvested Awards Granted in Prior Years</u>	<u>Plus Change in Value of Prior Years' Awards Vested During Year</u>	<u>Comp. Actually Paid to CEO</u>
2024	\$ 481,168	\$ 67,280	\$ 49,007	\$ (1,622)	\$ 16,193	\$ (7,807)	\$ 469,659

<u>Year</u>	<u>Summary Comp. Table Total for Former CEO</u>	<u>Minus Stock and Option Awards from Summ. Comp. Table</u>	<u>Plus Year-End Equity Value of Unvested Awards Granted During Year</u>	<u>Plus Change in Value of Unvested Awards Granted in Prior Years</u>	<u>Plus Change in Value of Prior Years' Awards Vested During Year</u>	<u>Comp. Actually Paid to Former CEO</u>
2024	\$ 673,144	\$ -	\$ -	\$ (64,967)	\$ 14,467	\$ 622,644
2023	\$ 563,494	\$ 67,863	\$ 59,661	\$ 1,103	\$ 3,990	\$ 560,385
2022	\$ 632,827	\$ 98,882	\$ 20,922	\$ (37,387)	\$ (91,861)	\$ 425,619

<u>Year</u>	<u>Avg. Summary Comp. Table Total for Other NEOs</u>	<u>Minus Avg. Stock and Option Awards from Summ. Comp. Table</u>	<u>Plus Avg. Year-End Equity Value of Unvested Awards Granted During Year</u>	<u>Plus Avg. Change in Value of Unvested Awards Granted in Prior Years</u>	<u>Plus Avg. Change in Value of Prior Year's Awards Vested During Year</u>	<u>Average Comp. Actually Paid to Other NEOs</u>
2024	\$ 554,083	\$ -	\$ -	\$ (33,544)	\$ 685	\$ 521,224
2023	\$ 434,774	\$ 33,932	\$ 29,830	\$ 552	\$ 1,995	\$ 433,219
2022	\$ 472,180	\$ 49,441	\$ 10,461	\$ (18,693)	\$ (37,345)	\$ 377,162

For the equity values included in the above tables, the valuation assumptions used to calculate fair values of stock options were materially different from those disclosed at the time of the grant of the stock options. The assumptions used in determining fair value of the stock options that vested during 2022, 2023 and 2024, or that were outstanding as of December 31, 2022, December 31, 2023 or December 31, 2024, as applicable, are as follows:

	<u>Options Vested During Year or Outstanding on December 31 of:</u>		
	<u>2024</u>	<u>2023</u>	<u>2022</u>
Expected Volatility	74.42% - 112.22%	105.80% - 121.52%	123.60% - 135.86%
Risk-Free Interest Rate	3.45% - 5.41%	3.54% - 4.80%	2.15% - 4.05%
Expected Dividend Yield	0%	0%	0%
Expected Term (in years)	0.5 - 5.46	3.63 - 5.82	3.5 - 5.12

(4) Total Shareholder Return illustrates the value, as of the last day of the indicated fiscal year of an investment of \$100 in Xenetic common stock on December 31, 2021.

Description of Relationship Between NEO Compensation Actually Paid and Company Total Shareholder Return (“TSR”) and Net Loss

The Compensation Actually Paid to our CEO and the average of Compensation Actually Paid to our Non-CEO NEOs increased in 2024, which corresponded to the increase in the Company’s TSR and decrease in Net Loss in 2024. The Compensation Actually Paid for both our former CEO and Non-CEO NEOs in 2024 increased primarily due to severance commitments incurred in 2024. The CEO and Non-CEO NEOs Non-Equity Incentive Plan Compensation is determined based on our strategic, financial and operating performance objectives that have been established by the Compensation Committee. While not directly tied to stock price performance and/or net loss, these performance objectives have been established as core drivers of TSR.

Employment Agreements with our Named Executive Officers

Employment Agreement with Mr. Parslow

We entered into an employment agreement with Mr. Parslow effective as of April 3, 2017 (the “Parslow Employment Agreement”). The Parslow Employment Agreement does not provide for a specified term of employment and Mr. Parslow’s employment will be on an at-will basis. Mr. Parslow received an initial annual base salary of \$265,000 and is eligible to earn an annual cash incentive bonus, which is set at a target aggregate bonus amount of 35% of Mr. Parslow’s base salary, upon achievement of certain individual and/or Company performance goals set by the Compensation Committee. Mr. Parslow is also eligible to participate in the Company’s employee benefit, welfare and other plans, as may be maintained by the Company from time to time, on a basis no less favorable than those provided to other similarly-situated executives of the Company. Mr. Parslow is also subject to certain customary confidentiality, non-solicitation and non-competition provisions.

If Mr. Parslow’s employment is terminated by the Company without “cause” (as defined in the Parslow Employment Agreement) or Mr. Parslow resigns for “good reason” (as defined in the Parslow Employment Agreement), he will be entitled to receive (i) one year of his then current base salary, paid over time in accordance with the Company’s payroll practices then in effect and (ii) payment of premiums for continued health benefits under COBRA for up to one year.

On May 16, 2024, the Board appointed Mr. Parslow to the position of Interim Chief Executive Officer, in addition to his role as the Company’s Chief Financial Officer. In connection with the foregoing, on June 18, 2024, the Company and Mr. Parslow entered into an amendment (the “Parslow Employment Amendment”) to the Parslow Employment Agreement, to provide for, effective as of May 16, 2024: (i) certain changes to Mr. Parslow’s title and responsibilities; (ii) an increase in Mr. Parslow’s base salary to \$400,000; (iii) a \$100,000 cash retention bonus if Mr. Parslow remains employed with the Company for a ten month period; and (iv) a stock option grant to Mr. Parslow to purchase 20,000 shares of common stock of the Company with an exercise price equal to the fair market value of the Company’s common stock on the effective date of the Parslow Employment Amendment. Such option grant shall be issued pursuant to the terms and conditions of the Company’s Amended and Restated Equity Incentive Plan, and shall vest one-fourth on the grant date and one-fourth upon the first, second and third anniversaries of the grant date, provided Mr. Parslow remains employed with the Company on the applicable vesting date. All other terms of the Parslow Employment Agreement remain in full force and effect.

Employment Agreement with Mr. Eisenberg

The Company entered into an employment agreement with Mr. Eisenberg effective as of December 1, 2016, which agreement was amended and restated on October 26, 2017 (as amended, the “Amended Agreement”) pursuant to which Mr. Eisenberg was previously employed as the Chief Executive Officer of the Company. The Amended Agreement was for an initial term of one year, and automatically renewed for successive one year periods unless either party gave notice to the other no later than 90 days prior to the expiration of the then-applicable term; provided, however, that we could terminate the Amended Agreement at any time. Mr. Eisenberg’s annual salary under the Amended Agreement was \$300,000, and was subject to annual review and upward adjustment only by the Compensation Committee of the Board. Mr. Eisenberg was eligible to receive a bonus equal to 50% of his annual salary based on the attainment of certain individual and/or Company goals established by the Board or a committee thereto, and if Mr. Eisenberg’s employment was terminated by us without “Cause” (as defined in the Amended Agreement) or if he resigned for “Good Reason” (as defined in the Amended Agreement), he would be entitled to receive (i) within thirty days following the date of termination, an amount equal to one times his then current base salary, (ii) a pro-rated annual bonus and (iii) payment of premiums for continued health benefits under COBRA for up to twelve months. Mr. Eisenberg was also eligible to participate in our employee benefit, welfare and other plans, as may be maintained by us from time to time, on a basis no less favorable than those provided to other similarly situated executives of the Company. Mr. Eisenberg was also subject to certain customary confidentiality, non-solicitation and non-competition provisions.

The Company entered into a confidential separation agreement and release with Mr. Eisenberg on June 19, 2024 in connection with his separation of employment from the Company that was effective as of May 16, 2024 pursuant to which Mr. Eisenberg became eligible to receive the payments and benefits described above in connection with a termination without “Cause” and also received full vesting of all outstanding unvested options to purchase shares of common stock of the Company.

Employment Agreement with Dr. Lockshin

The Company previously entered into an employment agreement with Dr. Lockshin effective as of January 1, 2017 (the “Lockshin Employment Agreement”) pursuant to which Dr. Lockshin was previously employed as the Chief Scientific Officer of the Company. The Lockshin Employment Agreement did not provide for a specified term of employment and Dr. Lockshin’s employment was on an at-will basis. Dr. Lockshin received an initial annual base salary of \$250,000 and was eligible to earn an annual performance-based cash incentive bonus, which was set at a target aggregate bonus amount of 35% of Dr. Lockshin’s base salary, upon achievement of certain individual and/or Company performance goals established by the Board or a committee thereto. Dr. Lockshin was also eligible to participate in the Company’s employee benefit, welfare and other plans, as may be maintained by the Company from time to time, on a basis no less favorable than those provided to other similarly-situated executives of the Company. Dr. Lockshin was also subject to certain customary confidentiality, non-solicitation and non-competition provisions.

If Dr. Lockshin’s employment was terminated by the Company without “Cause” (as defined in the Lockshin Employment Agreement) or Dr. Lockshin terminated his employment for “Good Reason” (as defined in the Lockshin Employment Agreement) and Dr. Lockshin executed and did not revoke a general release of claims against the Company, then he would be entitled to receive (i) one year of his then current base salary, paid over time in accordance with the Company’s payroll practices then in effect and (ii) payment of premiums for continued health benefits under COBRA for up to twelve months.

The Company entered into a confidential separation agreement and release with Dr. Lockshin on June 19, 2024 in connection with his separation of employment from the Company that was effective as of May 16, 2024 pursuant to which Dr. Lockshin became eligible to receive the payments and benefits described above in connection with a termination without “Cause”.

Potential Payments Upon Termination or Change of Control

Our named executive officers may be entitled to payments upon termination or change of control. The details of such payments are included in the description of their employment agreements above.

Director Compensation

Each of our non-employee, independent directors is currently entitled to receive an annual retainer of \$43,000, payable in equal quarterly installments, an option to acquire 2,500 shares of the Company's common stock upon initial appointment to the Board, and an additional option to acquire 2,500 shares each year thereafter on the date of the Company's annual meeting of stockholders. All members of our Board are reimbursed for their usual and customary expenses incurred in connection with their service on the Board, including out-of-pocket expenses, transportation, and airfare on the Company's business.

Director Compensation Table

As an employee director during fiscal year 2024, Mr. Eisenberg did not receive any compensation for his Board service during the last completed year. The following table sets forth information for the year ended December 31, 2024 regarding the compensation awarded to, earned by or paid to our non-employee directors:

<u>Name</u>	<u>Fees Earned or Paid in Cash (\$)</u>	<u>Stock Awards (\$)</u>	<u>Option Awards⁽¹⁾⁽²⁾ (\$)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
Dr. Grigory Borisenko	43,000	–	8,721	–	51,721
Firdaus Jal Dastoor	43,000	–	8,721	–	51,721
Dr. Dmitry Genkin ⁽³⁾	–	–	–	–	–
Dr. Roger Kornberg	43,000	–	8,721	–	51,721
Mr. Moshe Mizrahy ⁽³⁾	–	–	–	–	–
Dr. Alexey Vinogradov	43,000	–	8,721	–	51,721

(1) The amounts represent the aggregate grant date fair value of stock options granted during 2024, computed in accordance with FASB ASC Topic 718. For a discussion of the assumptions and methodology used to calculate the value of our stock options, see Note 10 to our audited financial statements included in Item 8 of the Original Filing.

(2) The table below shows the aggregate number of option awards outstanding for each of our non-employee directors as of December 31, 2024:

<u>Name</u>	<u>Option Awards (#)</u>
Dr. Grigory Borisenko	7,500
Firdaus Jal Dastoor	15,796
Dr. Dmitry Genkin	–
Dr. Roger Kornberg	15,626
Mr. Moshe Mizrahy	2,500
Dr. Alexey Vinogradov	15,000

(3) The Board determined that Dr. Genkin and Mr. Mizrahy are not independent directors, and as such, neither were eligible for compensation during fiscal year 2024.

See "[Certain Related Person Transactions](#)" below for compensation arrangements involving specific members of the Board.

ITEM 12 – SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The following table and footnotes set forth certain information known to us regarding beneficial ownership of our capital stock as of March 31, 2025 for:

- each person known by us to be the beneficial owner of more than 5% of our capital stock;
- our named executive officers;
- each of our directors; and
- all executive officers and directors as a group.

The number of shares beneficially owned by each entity, person, director or executive officer is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares over which the individual has sole or shared voting power or investment power as well as any shares that the individual has the right to acquire within 60 days through the exercise of any stock option, warrants or other rights. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock held by that person or entity.

The percentage of shares beneficially owned is computed on the basis of 1,542,139 shares of our common stock outstanding as of March 31, 2025, on an as-converted basis. Shares of our common stock that a person has the right to acquire within 60 days after March 31, 2025 are deemed outstanding for purposes of computing the percentage ownership of the person or entity holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all directors and executive officers as a group. Unless otherwise indicated below, the address for each beneficial owner listed is c/o Xenetic Biosciences, Inc., at 945 Concord Street, Framingham, Massachusetts 01701.

<u>Name of Beneficial Owner</u>	<u>Number of Shares Beneficially Owned ⁽¹⁾</u>	<u>Percentage of Class Beneficially Owned</u>
<u>Fiscal Year 2024 Named Executive Officers and Current Directors</u>		
James Parslow	28,626 ⁽²⁾	1.8%
Jeffrey Eisenberg	64,459 ⁽³⁾	4.0%
Dr. Curtis Lockshin	127 ⁽⁴⁾	*
Dr. Grigory Borisenko ⁽⁵⁾	5,000 ⁽⁶⁾	*
Firdaus Jal Dastoor	13,296 ⁽⁷⁾	*
Dr. Dmitry Genkin ⁽⁵⁾	215,964 ⁽⁸⁾	14.0%
Dr. Roger Kornberg	13,126 ⁽⁹⁾	*
Moshe Mizrahy	2,500 ⁽¹⁰⁾	*
Alexey Vinogradov	31,179 ⁽¹¹⁾	2.0%
All current executive officers and directors as a group (7 persons)	162,191 ⁽¹²⁾	10.0%
<u>5% Current Stockholders</u>		
CLS Therapeutics Ltd.	147,500 ⁽⁸⁾	9.6%
PJSC Pharmsynthez ⁽⁵⁾	97,922 ⁽¹³⁾	6.2%

* Represents beneficial ownership of less than one percent (1%).

(1) Unless otherwise indicated below, this table is based upon corporate records, information supplied by officers, directors and, in the case of principal stockholders, information provided by our transfer agent.

(2) The total beneficial ownership consists of 28,626 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.

- (3) The total beneficial ownership consists of 417 shares of common stock owned directly and 64,042 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (4) The total beneficial ownership consists of 127 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (5) Dr. Borisenko was employed by Rusnano LLC, an entity affiliated with Pharmsynthez, through March 31, 2022. Dr. Dmitry Genkin and Dr. Alexey Vinogradov are on the board of directors of Pharmsynthez, with Dr. Genkin serving as Executive Chairman. Refer to the “Transactions with Related Persons” section below for additional information with respect to certain related party transactions involving Dr. Genkin, Dr. Vinogradov and Pharmsynthez (including its wholly owned subsidiaries).
- (6) The total beneficial ownership consists of 5,000 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (7) The total beneficial ownership consists of 13,296 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (8) Based on the Schedule 13D/A filed with the SEC on March 18, 2024 by CLS Therapeutics Ltd., a limited company organized under the laws of Guernsey, United Kingdom (“CLS”), CLS Therapeutics, LLC, a Delaware limited liability company and subsidiary of CLS (“CLS LLC”), Dmitry Genkin (“Genkin”), Victor Tets (“VT”), Georgy Tets (“GT”) and M. Scott Maguire (“Maguire”) (the “CLS 13D”): CLS has sole voting and dispositive power as to 147,500 shares of common stock, which includes 85,000 shares of common stock owned by CLS LLC; CLS LLC has sole voting and dispositive power as to 85,000 shares of common stock; Genkin has sole voting and dispositive power as to 68,464 shares of common stock and shared voting and dispositive power as to 147,500 shares of common stock; VT and GT each have shared voting and dispositive power as to 147,500 shares of common stock; and Maguire has sole voting and dispositive power as to 3,800 shares of common stock, and shared voting and dispositive power as to 2,202 shares of common stock. CLS, as the ultimate parent of CLS LLC, may exercise voting and dispositive power over the shares owned by CLS LLC, and as such, may be deemed the beneficial owner of such shares. Genkin, VT and GT may exercise voting and dispositive power over the shares owned by CLS and CLS LLC, and as such, may be deemed to be the beneficial owner of such shares. According to the 13D, the address of Genkin is Pazzale Baracca 2, Milan, Italy; the address of CLS and CLS LLC is PO Box 175, Frances House, Sir William Place, St. Peter Port Guernsey, Channel Islands GY1 4HQ; and the address of VT and GT is 180 Varick Street, New York, NY 10014.
- (9) The total beneficial ownership consists of 13,126 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (10) The total beneficial ownership consists of 2,500 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (11) The total beneficial ownership consists of 18,679 shares of common stock owned directly and 12,500 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (12) The total beneficial ownership consists of 87,143 shares of common stock owned directly and 75,048 shares issuable upon exercise of options that are exercisable within 60 days of March 31, 2025.
- (13) The total beneficial ownership consists of 52,797 shares of common stock owned directly or indirectly through SynBio and 45,125 shares issuable upon the conversion of Series B Preferred Stock that are exercisable within 60 days of March 31, 2025. SynBio is a wholly-owned subsidiary of Pharmsynthez. Pharmsynthez may be deemed to have shared voting and shared dispositive power with respect to all the shares owned by SynBio and therefore, Pharmsynthez may be deemed to be the beneficial owner of such shares. The address of PJSC Pharmsynthez is 9 Korpunaya Street, Letter A 1st Floor, St. Petersburg, 197110, Russia. Refer to the [“Certain Related Person Transactions”](#) section below for additional information with respect to certain related party transactions involving Pharmsynthez.

Equity Compensation Plan Information

The following table sets forth information as of December 31, 2024 with respect to compensation plans under which equity securities are authorized for issuance:

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	197,647 ⁽¹⁾	\$ 24.24	54,503
Equity compensation plans not approved by security holders	1,459 ⁽²⁾	548.40	—
Total	199,106	\$ 28.08	54,503

(1) Consists of 197,647 shares of our common stock to be issued upon the exercise of outstanding stock options under the Xenetic Biosciences, Inc. Amended and Restated Equity Incentive Plan (“Equity Plan.”)

(2) Represents inducement award granted to Mr. Parslow in 2017 in connection with his employment with the Company that was not covered under the Equity Plan in accordance with Nasdaq Listing Rule 5635(c)(4). The option has a ten-year term and is fully vested.

ITEM 13 – CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

During the fiscal years ended December 31, 2024 and December 31, 2023, there was not, nor is there any currently proposed transaction or series of similar transactions to which Xenetic was or is to be a party in which the amount involved exceeded or exceeds the lesser of \$120,000 or 1% of the average of our total assets at year end for the last two completed fiscal years and in which any executive officer, director or holder of more than 5% of any class of voting securities of Xenetic and members of that person's immediate family had, has or will have a direct or indirect material interest, other than as set forth in "Executive Compensation" and "Director Compensation Table" above and as disclosed below.

Policy Regarding Related Party Transactions

Our Board adopted an amended written related party transaction policy on August 27, 2020 to set forth the policies and procedures for the review and approval or ratification of related party transactions by our audit committee, which replaced the policy previously adopted in November 1, 2016. Any transaction between the Company and its officers, directors, principal stockholders or affiliates is required to be on terms no less favorable to us than could be reasonably obtained in arms-length transactions with independent third-parties. Transactions described in this section that occurred prior to November 1, 2016 were not covered by the Company's related party transaction policy.

Certain Related Person Transactions

PJSC Pharmsynthez

Pharmsynthez directly, and indirectly through its wholly-owned subsidiary SynBio LLC ("SynBio"), had a share ownership in the Company of approximately 3% of the total outstanding common stock at March 31, 2025. In addition to its common stock ownership, Pharmsynthez holds approximately 1.5 million shares of our outstanding Series B Preferred Stock at March 31, 2025. In addition, two of our current directors, Dr. Dmitry Genkin and Dr. Alexey Vinogradov serve on the board of directors of Pharmsynthez, with Dr. Genkin serving as Executive Chairman, and, prior to March 31, 2022, Dr. Grigory Borisenko, one of our current directors, was employed as the Investment Director of Rusnano LLC, an entity affiliated with Pharmsynthez.

In November 2009, the Company entered into a collaborative research and development license agreement with Pharmsynthez (the "Pharmsynthez Arrangement") pursuant to which the Company granted an exclusive license to Pharmsynthez to develop, commercialize and market six product candidates based on the Company's PolyXen and ImuXen technology in certain territories. In exchange, Pharmsynthez granted an exclusive license to the Company to use any preclinical and clinical data developed by Pharmsynthez, within the scope of the Pharmsynthez Arrangement, and to engage in further research, development and commercialization of drug candidates outside of certain territories at the Company's own expense.

In August 2011, SynBio and the Company entered into a stock subscription and collaborative development agreement (the "Co-Development Agreement"). The Company granted an exclusive license to SynBio to develop, market and commercialize certain drug candidates utilizing molecules based on SynBio's technology and the Company's proprietary technologies (PolyXen, OncoHist and ImuXen) in Russia and Commonwealth of Independent States ("CIS"), collectively referred to herein as the SynBio Market. In return, SynBio granted an exclusive license to the Company to use the preclinical and clinical data generated by SynBio in certain agreed products and to engage in the development of commercial candidates in any territory outside of the SynBio Market.

SynBio is solely responsible for funding and conducting their own research and clinical development activities. There are no milestone or other research-related payments provided for under the Co-Development Agreement other than fees for the supply of each company's respective research supplies based on their technology, which, when provided, are due to mutual convenience and not representative of an ongoing or recurring obligation to supply research supplies. Upon successful commercialization of any resultant products, the Company is entitled to receive a 10% royalty on sales in certain territories and pay royalties to SynBio for sales outside those certain territories, subject to the terms of the Co-Development Agreement. Effective December 20, 2021, SynBio assigned the Co-Development Agreement to Pharmsynthez.

Through December 31, 2024, Pharmsynthez informed the Company that it continued to engage in research and development activities with no resultant commercial products. In December 2020, Pharmsynthez reported positive data from its Phase 3 clinical study of Epolong, a treatment for anemia in patients with chronic kidney disease leveraging the Company's PolyXen technology. Pharmsynthez filed a registration dossier to obtain approval in Russia and informed the Company that it has received a response letter indicating certain deficiencies in the dossier. Pharmsynthez further informed the Company that it developed a gap mitigation strategy and is currently determining next steps. The Company did not recognize revenue in connection with the Co-Development Agreement during the years ended December 31, 2024 and 2023.

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 December 31, 2024 and December 31, 2023. The Company did not recognize any interest income related to the Pharmsynthez Loan during the year ended December 31, 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 twelve months ended December 31, 2023.

Peri-Ness Technologies Ltd.

During the fourth quarter of 2024, the Company entered into a clinical trial services agreement with PeriNess Ltd. ("PeriNess") to advance the Company's development program for its systemic DNase I technology in Israeli medical centers. One of our directors, Dr. Dmitry Genkin, is a significant shareholder of PeriNess and another of our directors, Mr. Moshe Mizrahy, is a majority shareholder and director of PeriNess. The services to be provided under this agreement are estimated to be approximately \$0.3 million.

Consulting Services Agreement with Dr. Dmitry Genkin

During the first quarter of 2025, the Company entered into a Consulting Agreement with Dr. Genkin, Chairman of our Board Directors, to provide consulting services to the Company's DNase-based oncology program. The agreement was effective January 1, 2025 and the Company paid Dr. Genkin approximately \$90,000 during the three months ended March 31, 2025, of which approximately \$30,000 was reflected in current liabilities as of March 31, 2025. Dr. Genkin does not receive any fees for his service as a member of the Board of Directors.

Director Independence

As required under the Nasdaq Stock Market LLC ("Nasdaq") listing standards, a majority of the members of a listed company's board of directors must qualify as "independent," as affirmatively determined by the Board of Directors. The Board consults with advisors to ensure that the Board's determinations are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent listing standards of Nasdaq, as in effect from time to time.

Consistent with these considerations, after review of all relevant identified transactions or relationships between each director, or any of his or her family members, and the Company, its senior management and its independent auditors, the Board affirmatively determined that the following directors are independent directors within the meaning of the applicable Nasdaq listing standards (and were for the period during which they served as a member of the Board during fiscal year 2024): Dr. Callaway, Mr. Dastoor, Dr. Kornberg, Mr. Logal, Mr. Mizrahy (until October 2024 in connection with the approval of a proposed transaction with Peri-Ness, as described in the “[Certain Related Person Transactions](#)” section of this Form 10-K/A), Dr. Vinogradov and Dr. Borisenko. In making these determinations, the Board considered the current and prior relationships that each non-employee director had with the Company and all other facts and circumstances our Board deemed relevant in determining independence, including those transactions set forth in the “[Certain Related Person Transactions](#)” section of this Form 10-K/A, as previously disclosed with the SEC.

During fiscal year 2024, all members of our Audit Committee, Nominating and Corporate Governance Committee, and Compensation Committee were independent (as independence is currently defined in Rule 5605 of the Nasdaq listing standards).

ITEM 14 – PRINCIPAL ACCOUNTING FEES AND SERVICES

The following table represents aggregate fees billed to the Company for the fiscal years ended December 31, 2024 and December 31, 2023, by Marcum LLP, the Company’s principal accountant.

	2024	2023
Audit Fees	\$ 160,000	\$ 168,228
Audit-Related Fees	5,000	20,342
Tax Fees	–	–
All Other Fees	–	–
	<u>\$ 165,000</u>	<u>\$ 188,570</u>

Audit Fees

Audit fees include the total fees incurred in connection with the audit of our annual consolidated financial statements for each of the years ended December 31, 2024 and 2023.

Audit-Related Fees

Audit related fees during the year ended December 31, 2024 include fees incurred in connection with our S-3 registration statement. Audit related fees during the year ended December 31, 2023 include fees incurred in connection with comfort letters issued in connection with our At-The-Market program under our S-3 registration statement.

Audit and Non-Audit Services Pre-Approval Policy

The Audit Committee pre-approves all audit and non-audit accounting services provided by our independent, registered accounting firm. All audit and non-audit fee services described above were pre-approved by the Audit Committee.

Pursuant to the Board of Directors’ policy, to help ensure the independence of our independent registered public accounting firm, all auditing services and permitted non-audit services (including the terms thereof) to be performed for us by our independent registered public accounting firm must be pre-approved by the Audit Committee, subject to the de-minimis exceptions for non-audit services described in Section 10A(i)(1)(B) of the Exchange Act, which are approved by the Audit Committee prior to the commencement of services.

Our Audit Committee approved and retained Marcum LLP to audit our consolidated financial statements for 2024. Our Audit Committee reviewed all services provided by Marcum LLP in 2024 and concluded that the services provided were compatible with maintaining its independence.

PART IV

ITEM 15 – EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following financial statements, schedules and exhibits are filed as part of this report:

Consolidated Financial Statements: The consolidated financial statements and report of independent registered public accounting firm required by this item are included in Part II, Item 8 of the Original Filing;

Financial Statement Schedules: All schedules were omitted because they are not applicable or not required, or because the required information is shown in the consolidated financial statements or in the notes thereto.

(b) **Exhibits:** The exhibits required to be filed by Item 15 are set forth in, and filed with or incorporated by reference in, the “Exhibit Index” of the Original Filing. The attached list of exhibits in the “[Exhibit Index](#)” sets forth the additional exhibits required to be filed with this Amendment and is incorporated herein by reference in response to this item.

EXHIBIT INDEX

Exhibit No.	Exhibit Index	Form	Filing Date	Exhibit Number	Filed Herewith
31.3	Certification of Principal Executive Officer, as required by Rule 13a-14(a) and Rule 15d-14(a)				X
31.4	Certification of Principal Financial Officer, as required by Rule 13a-14(a) and Rule 15d-14(a)				X
101.INS	Inline XBRL Instance Document				X
101.SCH	Inline XBRL Taxonomy Extension Schema Document				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.				X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.				X
104	Cover Page Interactive Data File (embedded within the inline document and included in Exhibit 101)				X

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a),
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, James Parslow, certify that:

1. I have reviewed this Amendment No. 1 to the annual report on Form 10-K of Xenetic Biosciences, Inc.; and
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.

Dated: April 29, 2025

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

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a),
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, James Parslow, certify that:

1. I have reviewed this Amendment No. 1 to the annual report on Form 10-K of Xenetic Biosciences, Inc.; and
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.

Dated: April 29, 2025

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