

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

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

**Bionano Genomics, Inc.**  
(Exact name of registrant as specified in its charter)

**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**3826**  
(Primary Standard Industrial  
Classification Code Number)

**26-1756290**  
(I.R.S. Employer  
Identification Number)

**Bionano Genomics, Inc.**  
**9540 Towne Centre Drive, Suite 100**  
**San Diego, California 92121**  
**(858) 888-7600**

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

**R. Erik Holmlin, Ph.D.**  
**President and Chief Executive Officer**  
**Bionano Genomics, Inc.**  
**9540 Towne Centre Drive, Suite 100**  
**San Diego, California 92121**  
**(858) 888-7600**

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

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

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

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

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

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

**The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said section 8(a), may determine.**

**The information in this preliminary prospectus is not complete and may be changed. The Selling Securityholders named in this preliminary prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.**

**PRELIMINARY PROSPECTUS**

**SUBJECT TO COMPLETION, DATED JANUARY 3, 2025**



## **50,555,556 Shares of Common Stock**

In May 2024, we issued and sold pursuant to a Securities Purchase Agreement, dated May 24, 2024, with certain accredited investors (the "Selling Securityholders") in a private placement, 2,250,000 shares (the "Upfront Shares") of our common stock, \$0.0001 par value per share ("common stock"), and \$20.0 million aggregate principal amount of senior secured convertible debentures due May 24, 2026 (the "Debentures") initially convertible into 10,000,000 shares of our common stock. In June 2024, we registered for resale by the Selling Securityholders up to 12,250,000 shares of our common stock comprising (i) up to 2,250,000 Upfront Shares and (ii) up to 10,000,000 shares of common stock issuable upon conversion of the Debentures (the "Initial Conversion Shares").

In December 2024, we entered into a Settlement Agreement and First Amendment to Debentures (the "Amendment") with the Selling Securityholders to amend certain terms of the Debentures, including certain repayment terms and an adjustment to the price at which we may convert outstanding cash principal under the Debentures into shares of common stock (the "Conversion Price"). As a result of this Conversion Price adjustment, the remaining outstanding aggregate principal amount of the Debentures will be convertible into an additional 45,555,556 shares of common stock (the "Conversion Shares"). As consideration for, among other things, the amendment to the repayment terms of the Debentures pursuant to the Amendment, we have issued to the Selling Securityholders in a private placement (the "Private Placement") 5,000,000 shares of common stock (the "Private Placement Shares" and together with the Conversion Shares, the "Shares"). This prospectus relates to the resale by the Selling Securityholders of up to 50,555,556 shares of common stock, comprising (i) up to 45,555,556 Conversion Shares and (ii) the 5,000,000 Private Placement Shares. We will not receive any proceeds from the resale by the Selling Securityholder of the Shares described in this prospectus.

Our registration of the Shares covered by this prospectus does not mean that the Selling Securityholders will offer or sell any of the Shares. See the section entitled "Plan of Distribution" for additional information about how the Selling Securityholders may sell or otherwise dispose the Shares. See the section entitled "Selling Securityholders" for additional information regarding the Selling Securityholders.

Our common stock is listed on The Nasdaq Capital Market under the symbol "BNGO." On December 31, 2024, the closing price of our common stock was \$0.29 per share.

We are a "smaller reporting company" as defined under the federal securities laws and, as such, have elected to comply with certain reduced reporting requirements for this prospectus and may elect to do so in future filings.

***Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 4 of this prospectus as well as those contained in any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.***

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

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”), utilizing a “shelf” registration process. Under this shelf registration process, the Selling Securityholders may, from time to time, sell the securities offered by it described in this prospectus. We will not receive any proceeds from the sale of the securities offered by the Selling Securityholders described in this prospectus.

We have not, and the Selling Securityholders havenot, authorized anyone to provide you with information different than or inconsistent with the information contained in or incorporated by reference in this prospectus, any applicable prospectus supplement or any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the placement agent takes responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the placement agent is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus, the documents incorporated by reference in this prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, the documents incorporated by reference in this prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections titled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference.”

The Selling Securityholders are offering to sell, and seeking offers to buy, the securities offered by the Selling Securityholders described in this prospectus only in jurisdictions where offers and sales are permitted. The distribution of this prospectus and this offering of our securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, this offering of our securities and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise mentioned or unless the context indicates otherwise, all references in this prospectus to “Bionano,” “the Company,” “we,” “us,” “our” and similar references refer to Bionano Genomics, Inc. and its subsidiaries or, as the context may require, Bionano Genomics, Inc. only. “Bionano Laboratories,” “BioDiscovery” and “Purigen” refer to our wholly owned subsidiaries, Lineagen, Inc. (doing business as Bionano Laboratories), BioDiscovery, LLC and Purigen Biosystems, Inc., respectively.

Our design logo, “Bionano,” and our other registered and common law trade names, trademarks and service marks are the property of Bionano Genomics, Inc. The trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. We do not intend our use or display of other companies’ trademarks, trade names or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies or products.

**PROSPECTUS SUMMARY**

*The following summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. For a more complete understanding of our company and this offering, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus, including the factors described under the heading “Risk Factors”.*

**Company Overview**

We are a provider of genome analysis solutions that can enable researchers and clinicians to reveal answers to challenging questions in biology and medicine. Our mission is to transform the way the world sees the genome through OGM solutions, diagnostic services and software. We offer OGM solutions for applications across basic, translational and clinical research. We also offer an industry-leading, platform-agnostic genome analysis software solution and nucleic acid extraction and purification solutions using proprietary isotachopheresis (“ITP”) technology. Through our Lineagen, Inc. d/b/a Bionano Laboratories business, we also offers OGM-based diagnostic testing services.

**Recent Developments*****Operating and Manufacturing Cost Reductions***

On September 4, 2024, we committed to a reorganization plan (the “Plan”), including a reduction in force intended to decrease expenses and maintain a streamlined organization to support key programs and customers, and that is expected to conserve cash. The Plan refocused the Company’s efforts on the current installed base of OGM systems with less emphasis on new placements of OGM systems and more emphasis on ensuring customers are able to maximize their utilization of the OGM systems. The reduction in force was substantially completed by October 1, 2024.

***Refinancing Transaction***

On May 24, 2024, we entered into a securities purchase agreement (the “Purchase Agreement”) with certain accredited investors (the “Selling Securityholders”) and JGB Collateral LLC for the sale of (i) 2,250,000 shares of our common stock and (ii) Senior Secured Convertible Debentures in the aggregate principal amount of \$20 million (the “Debentures”) for an aggregate purchase price of \$18 million. We received net proceeds of approximately \$17.9 million and used approximately \$17.6 million to fully redeem that certain Senior Secured Convertible Note due 2025 (the “High Trail Note”) made by us in favor of High Trail Special Situations LLC (“High Trail”) in the original principal amount of \$45.0 million. In connection with such redemption, we entered into a letter agreement with High Trail dated May 23, 2024, pursuant to which we agreed to redeem the entire outstanding principal amount of \$15.3 million under the High Tail Note at a redemption price of 115% for a total redemption payment of \$17.6 million and the High Trail Note was cancelled. We also paid High Trail the retirement fee of \$2.2 million set forth in the terms of the High Trail Note.

***October 2024 Offering***

On October 30, 2024, we entered into a securities purchase agreement with certain institutional investors for the sale of (i) in a registered direct offering priced at-the-market consistent with the rules of the Nasdaq Stock Market (the “October 2024 Registered Direct Offering”): (i) an aggregate of 9,881,113 shares of our Common Stock, (ii) Series C warrants to purchase up to an aggregate of 9,881,113 shares of Common Stock (the “Series C Warrants”) and (iii) Series D warrants to purchase up to an aggregate of 9,881,113 shares of Common Stock (the “Series D Warrants”, and together with the Series C Warrants, the “Purchase Warrants”). The shares of Common Stock will be sold in combination with an accompanying Series C Warrant to purchase one share of Common Stock and an accompanying Series D Warrant to purchase one share of Common Stock for each Share sold. The aggregate gross proceeds to us from the October 2024 Registered Direct Offering were approximately \$3.0 million (excluding up to approximately \$6.0 million of aggregate gross proceeds that may be received in the future upon the cash exercise of the Purchase Warrants), before deducting placement agent fees and other offering expenses payable by us.

***Amendment to the Purchase Agreement***

On December 31, 2024, we entered into an amendment of the Debentures (the “Amendment”) with the Selling Securityholders. Pursuant to the Amendment, the parties agreed (i) that no amortization payment would be paid in December 2024; (ii) that the maximum monthly amortization payments due between January 2025 and July 2025

would be reduced from \$1,000,000 per month to \$500,000 per month; (iii) that the maximum monthly amortization payments due from August 2025 through repayment in full of the principal aggregate amount would be \$1,375,000 per month; (iv) that the conversion price of the Debentures would be reduced from \$2.00 to \$0.27; (v) the Debentures will become non-callable by the Company until August 2025; and (v) that as consideration for the Amendment, we would issue to the Selling Securityholders 5,000,000 shares of our common stock (the “*Private Placement Shares*”).

### **Corporate Information**

We were formed in January 2003 as BioNanomatrix LLC, a Delaware limited liability company. In August 2007, we became BioNanomatrix Inc., a Delaware corporation. In October 2011, we changed our name to BioNano Genomics, Inc., and in July 2018, we changed our name to Bionano Genomics, Inc.

Our principal executive offices are located at 9540 Towne Centre Drive, Suite 100, San Diego, California 92121, and our telephone number is (858) 888-7600. Our website address is [www.bionanogenomics.com](http://www.bionanogenomics.com), and we regularly post copies of our press releases as well as additional information about us on our website. Information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus or in deciding whether to purchase our securities.

### **Implications of Being a Smaller Reporting Company**

We are a “smaller reporting company” meaning that the market value of our common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and the market value of our common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter. Accordingly, we may provide less public disclosure than larger public companies, including the inclusion of only two years of audited financial statements and only two years of management’s discussion and analysis of financial condition and results of operations disclosure. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

**THE OFFERING**

**Common Stock Offered by the Selling Securityholders**

Up to 50,555,556 shares, comprising (i) up to 45,555,556 Conversion Shares and (ii) 5,000,000 Private Placement Shares.

**Use of Proceeds**

We do not expect to receive any net proceeds from this offering but we expect the reduction in monthly amortization payments to substantially reduce our cash burn over the next two quarters See the section titled "Use of Proceeds."

**Risk Factors**

Investing in our securities involves a high degree of risk. See the section titled "Risk Factors" on page [4](#) of this prospectus and under similar headings in the accompanying prospectus and other documents incorporated by reference herein.

**Nasdaq Capital Market Symbol**

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

**RISK FACTORS**

*An investment in our securities involves a high degree of risk. You should carefully consider the following risk factors and the risk factors discussed under the section titled “Risk Factors” contained in our Annual Report on Form 10-K for the year ended December 31, 2023 and our Quarterly Reports on Form 10-Q for the three month periods ended September 30, 2024, June 30, 2024 and March 31, 2024 as may be updated by our subsequent filings, which are incorporated by reference into this prospectus in their entirety, together with all of the other information contained in this prospectus or incorporated by reference into this prospectus. The risks and uncertainties described in these documents are not the only ones we face. Other risks and uncertainties, including those that we do not currently consider material, may impair our business. If any of the risks discussed below or incorporated by reference actually occur, our business, financial condition, operating results or cash flows could be materially adversely affected. This could cause the value of our securities to decline, and you may lose all or part of your investment.*



**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus, including the documents incorporated by reference herein and therein, contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These statements are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the sections titled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" incorporated by reference from our most recent Annual Report on Form 10-K and our most recent Quarterly Report on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC.

Any statements in this prospectus, or incorporated by reference herein or therein, about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, these forward-looking statements may include, but are not limited to, statements regarding:

- our ability to finance our operations and business initiatives, including our ability to successfully implement our strategic restructuring plan, any strategic alternatives and other cost-reduction activities;
- the size and growth potential of the markets for our products, and our ability to serve those markets;
- the rate and degree of market acceptance of our products;
- our ability to manage the growth of our business and integrate acquired businesses;
- our ability to expand our commercial organization to address effectively existing and new markets that we intend to target;
- the impact from future regulatory, judicial, and legislative changes or developments in the U.S. and foreign countries;
- our ability to successfully execute our strategy and meet anticipated goals and milestones;
- our ability to compete effectively in a competitive industry;
- the introduction of competitive technologies or improvements in existing technologies and the success of any such technologies;
- the performance of our third-party contract sales organizations, suppliers and manufacturers;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenues, reimbursement rates, capital requirements and needs for additional financing;
- the impact of geopolitical and macroeconomic developments, such as the ongoing conflict between Ukraine and Russia and related sanctions, the Israel-Hamas war, potential future disruptions in access to bank deposits or lending commitments due to bank failures, global pandemics, inflation, increased cost of goods, supply chain issues, and global financial market conditions; on our business and operations, as well as the business or operations of our suppliers, customers, manufacturers, research partners and other third parties with whom we conduct business and our expectations with respect to the duration of such impacts and the resulting effects on our business;
- our ability to realize the anticipated benefits and synergies of our prior and any future acquisitions or other strategic transactions;
- use of our existing cash and cash equivalents, available-for-sale securities and the intended use of the net proceeds from recent offerings of our securities;
- our expected cash runway, ability to continue as a going concern, ability to service our debt obligations, and our ability to obtain funding for our operations;
- our ability to attract collaborators and strategic partnerships; and
- other uncertainties affecting us including those described in the sections titled "Risk Factors" in this prospectus, in our most recent Annual Report on Form 10-K, in our Quarterly Reports on Form 10-Q and in our Current Reports on Form 8-K filed with the SEC.

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In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expects,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative or plural of those terms, and similar expressions intended to identify statements about the future, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should refer to the risks and uncertainties described in the sections titled “Risk Factors” in this prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

**USE OF PROCEEDS**

We will not receive any of the proceeds from the sale by the Selling Securityholder of the Shares in this offering. The Selling Securityholders will receive all of the proceeds from the sale of the Shares hereunder.

## DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock, certain provisions of our certificate of incorporation and bylaws, and certain provisions of Delaware law are summaries. The following description is not complete and is subject to and qualified in its entirety by our certificate of incorporation and bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part, as well as the relevant provisions of the General Corporation Law of the State of Delaware.

As of the date of this prospectus, our certificate of incorporation authorized us to issue 400,000,000 shares of common stock, par value \$0.0001 per share, and 10,000,000 shares of preferred stock, par value \$0.0001 per share.

### Common Stock

#### *Voting Rights*

Our common stock is entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, including the election of directors, and does not have cumulative voting rights. Our amended and restated certificate of incorporation, as amended, establishes a classified board of directors that is divided into three classes with staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of our stockholders, with the directors in the other classes continuing for the remainder of their respective three-year terms.

#### *Economic Rights*

Except as otherwise expressly provided in our certificate of incorporation or required by applicable law, all shares of common stock have the same rights and privileges and rank equally, share ratably, and are identical in all respects for all matters, including those described below.

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

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

#### *No Preemptive or Similar Rights*

The holders of our shares of common stock are not entitled to preemptive rights, and are not subject to conversion, redemption or sinking fund provisions. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

### Preferred Stock

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control that may otherwise benefit holders of our common stock and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

### Anti-Takeover Provisions

We are subject to Section 203 of the General Corporation Law of the State of Delaware. Section 203 generally prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

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

Section 203 of the DGCL defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, exchange, mortgage, pledge, transfer or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

### ***Certificate of Incorporation and Bylaws to be in Effect upon the Closing of this Offering***

Among other things, our amended and restated certificate of incorporation, as amended, and amended and restated bylaws:

- do not provide stockholders with cumulative voting rights such that stockholders holding a majority of the voting power of our shares of common stock may be able to elect all of our directors;
- provide for stockholder actions to be taken at a duly called meeting of stockholders and not by written consent;
- provide that a special meeting of stockholders may only be called by a majority of our board of directors, the chair of our board of directors or our chief executive officer;
- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- divide our board of directors into three classes with staggered three-year terms;
- provide that the authorized number of directors may be changed only by resolution adopted by a majority of the authorized number of directors constituting the board of directors;
- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66 2/3% of the voting power of all of our then outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law or subject to the rights of holders of preferred stock as designated from time to time, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;

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- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to us or our stockholders, (iii) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine (these choice of forum provisions do not apply to suits brought to enforce a duty or liability created by the Securities Act, the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction).

The foregoing provisions make it difficult for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

### **Transfer Agent and Registrar**

Our transfer agent and registrar for our common stock is Equiniti Trust Company, LLC.

### **Listing on the Nasdaq Capital Market**

Our common stock is listed on the Nasdaq Capital Market under the symbol “BNGO.”

**MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES**

The following is a general discussion of the material United States, or U.S., federal income tax considerations of the purchase, ownership and disposition of shares of our common stock issued pursuant to this offering, or the Shares. The Shares are referred to herein as our “securities.” All prospective holders of our securities should consult their tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our securities.

This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating to the purchase, ownership and disposition of our securities. This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing U.S. Treasury Regulations promulgated thereunder, published administrative pronouncements and rulings of the U.S. Internal Revenue Service, which we refer to as the IRS, and judicial decisions, all as in effect as of the date of this prospectus. These authorities are subject to change and to differing interpretation, possibly with retroactive effect. Any change or differing interpretation could alter the tax consequences to holders described in this discussion. There can be no assurance that a court or the IRS will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling with respect to the U.S. federal income tax consequences to a holder of the purchase, ownership or disposition of our securities.

We assume in this discussion that a holder holds our securities as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular holder in light of that holder’s individual circumstances, nor does it address any alternative minimum, Medicare contribution, estate or gift tax consequences, or any aspects of U.S. state, local or non-U.S. taxes or any other U.S. federal tax laws. This discussion also does not address consequences relevant to holders subject to special tax rules, such as holders that own or have owned, or are deemed to own or have owned, more than 5% of our capital stock (except to the extent specifically set forth below), corporations that accumulate earnings to avoid U.S. federal income tax, tax-exempt organizations, governmental organizations, banks, financial institutions, investment funds, insurance companies, brokers, dealers or traders in securities, commodities or currencies, regulated investment companies or real estate investment trusts, persons that have a “functional currency” other than the U.S. dollar, tax-qualified retirement plans, “qualified foreign pension funds” as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds, holders who hold or receive our securities pursuant to the exercise of employee stock options or otherwise as compensation, holders holding our securities as part of a hedge, wash, straddle or other risk reduction strategy, conversion transaction or other integrated investment, holders deemed to sell our securities under the constructive sale provisions of the Code, holders subject to special tax accounting rules under Section 451(b) of the Code, controlled foreign corporations, passive foreign investment companies and certain former U.S. citizens or long-term residents.

In addition, this discussion does not address the tax treatment of partnerships (or entities or arrangements that are treated as partnerships or disregarded entities for U.S. federal income tax purposes) or persons that hold our securities through such partnerships. If a partnership, including any entity or arrangement treated as a partnership for U.S. federal income tax purposes, holds our securities, the U.S. federal income tax treatment of a partner in such partnership will generally depend upon the status of the partner and the activities of the partnership. Such partners and partnerships should consult their tax advisors regarding the tax consequences of the purchase, ownership and disposition of our securities.

**Tax Considerations Applicable to U.S. Holders**

***Definition of U.S. Holder***

In general, a “U.S. holder” means a beneficial owner of our securities (other than a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (a) a U.S. court can exercise primary supervision over the trust’s administration and one or more U.S. persons have the authority to control all of the trust’s substantial decisions or (b) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

***Distributions on the Shares***

We do not anticipate declaring or paying any future distributions. However, if we do make distributions on the Shares, such distributions will constitute dividends to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, and will be includible in your income as ordinary income when received. However, with respect to dividends received by individuals, such dividends are generally taxed at the lower applicable long-term capital gains rates, provided certain holding period and other requirements are satisfied. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the U.S. holder's investment, up to such U.S. holder's adjusted tax basis in the Shares. Any remaining excess will be treated as capital gain from the sale or exchange of such Shares, subject to the tax treatment described in "—Sale or Other Taxable Disposition of the Shares."

***Sale or Other Taxable Disposition of the Shares***

Upon the sale, exchange or other taxable disposition of the Shares, a U.S. holder will generally recognize capital gain or loss equal to the difference between the amount of cash and the fair market value of any property received upon the sale, exchange or other taxable disposition and such U.S. holder's adjusted tax basis in the Shares. This capital gain or loss will be long-term capital gain or loss if the U.S. holder's holding period in such Shares is more than one year at the time of the sale, exchange or other taxable disposition. Long-term capital gains recognized by certain non-corporate U.S. holders, including individuals, generally will be subject to reduced rates of U.S. federal income tax. The deductibility of capital losses is subject to certain limitations.

**Backup Withholding and Information Reporting**

A U.S. holder may be subject to information reporting and backup withholding when such holder receives payments on our securities (including constructive dividends) or receives proceeds from the sale or other taxable disposition of our securities. Certain U.S. holders are exempt from backup withholding, including C corporations and certain tax-exempt organizations. A U.S. holder will be subject to backup withholding if such holder is not otherwise exempt and such holder:

- fails to furnish the holder's taxpayer identification number, which for an individual is ordinarily his or her social security number;
- furnishes an incorrect taxpayer identification number;
- is notified by the IRS that the holder previously failed to properly report payments of interest or dividends; or
- fails to certify under penalties of perjury that the holder has furnished a correct taxpayer identification number and that the IRS has not notified the holder that the holder is subject to backup withholding.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a U.S. holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS. U.S. holders should consult their tax advisors regarding their qualification for an exemption from backup withholding and the procedures for obtaining such an exemption.

**Tax Considerations Applicable to Non-U.S. Holders**

***Definition of non-U.S. Holder***

For purposes of this discussion, a "non-U.S. holder" is a beneficial owner of our securities that is neither a U.S. holder nor a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes.



***Distributions on the Shares***

We do not anticipate declaring or paying any future distributions. However, if we make distributions on the Shares such distributions will constitute dividends to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such non-U.S. holder's adjusted tax basis in the Shares. Any remaining excess will be treated as capital gain from the sale or exchange of such Shares, subject to the tax treatment described in "—Gain on Sale, Exchange or Other Taxable Disposition of Our Securities" below.

Dividends paid to a non-U.S. holder will generally be subject to withholding of U.S. federal income tax at a 30% rate of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence for purposes of such treaty.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence for purposes of such treaty.

To claim a reduction or exemption from withholding, a non-U.S. holder generally will be required to provide (a) a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E (or successor form) and satisfy applicable certification and other requirements to claim the benefit of an applicable income tax treaty between the United States and such non-U.S. holder's country of residence, or (b) a properly executed IRS Form W-8ECI stating that dividends are not subject to withholding because they are effectively connected with such non-U.S. holder's conduct of a trade or business within the United States. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

Distributions will also be subject to the discussion in "—Backup Withholding and Information Reporting" and "—Foreign Accounts."

**Gain on Sale, Exchange or Other Taxable Disposition of Our Securities**

Subject to the discussion in "—Backup Withholding and Information Reporting" and "—Foreign Accounts," in general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such non-U.S. holder's sale, exchange or other taxable disposition of our securities unless:

- the gain is effectively connected with a U.S. trade or business of the non-U.S. holder and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained in the United States by such non-U.S. holder, in which case the non-U.S. holder generally will be taxed at the U.S. federal income tax rates applicable to U.S. persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described in "—Distributions on the Shares" also may apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% U.S. federal income tax (or such lower rate as may be specified by an applicable income tax treaty) on the net gain derived from the disposition, which may be offset by U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States); or

- we are, or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation" in which case such non-U.S. holder generally will be taxed on its net gain derived from the disposition as effectively connected income taxable at the U.S. federal income tax rates applicable to U.S. persons (as defined in the Code); however, the branch profits tax described above will not apply to a U.S. holder that is a foreign corporation. Generally, a corporation is a U.S. real property holding corporation if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. Even if we are or become a U.S. real property holding corporation, provided that our common stock is regularly traded, as defined by applicable U.S. Treasury Regulations, on an established securities market, the Shares will be treated as a U.S. real property interest only with respect to a non-U.S. holder that holds more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held the Shares. There can be no assurance that our common stock will continue to qualify as regularly traded on an established securities market.

### **Backup Withholding and Information Reporting**

We must report annually to the IRS and to each non-U.S. holder the gross amount of the dividends on our securities paid to such non-U.S. holder and the tax withheld, if any, with respect to such dividends. Non-U.S. holders will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to any dividends on our securities. A non-U.S. holder generally will not be subject to U.S. backup withholding with respect to payments of dividends on our securities if it certifies its non-U.S. status by providing a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or successor form) or IRS Form W-8ECI, or otherwise establishes an exemption; provided we do not have actual knowledge or reason to know such non-U.S. holder is a U.S. person, as defined in the Code. Dividends paid to non-U.S. holders subject to the U.S. withholding tax, as described in "—Distributions on the Shares" generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our securities by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is established under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder may be allowed as a credit against the non-U.S. holder's U.S. federal income tax liability, if any, and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

### **Foreign Accounts**

The Code generally imposes a U.S. federal withholding tax of 30% on dividends and, subject to the discussion below regarding proposed regulations issued by the U.S. Treasury Department, the gross proceeds of a disposition of our securities paid to a "foreign financial institution" (as defined in the Code), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding accounts held by certain "specific United States persons" or "United States owned foreign entities" (each as defined in the Code), or otherwise qualifies for an exemption from these rules. A U.S. federal withholding tax of 30% also applies to dividends and, subject to the discussion below regarding proposed regulations issued by the U.S. Treasury Department, will apply to the gross

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proceeds of a disposition of our securities paid to a “non-financial foreign entity” (as defined in the Code), unless such entity provides the withholding agent with either a certification that it does not have any “substantial United States owners” (as defined in the Code), provides information regarding each substantial United States owners of the entity, or otherwise qualifies for an exemption from these rules. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph.

The withholding provisions described above currently apply to dividends paid on our securities. The U.S. Treasury Department released proposed regulations which, if finalized in their present form, would eliminate the U.S. federal withholding tax of 30% applicable to the gross proceeds of a sale or other disposition of our securities. In its preamble to such proposed regulations, the U.S. Treasury Department stated that taxpayers may generally rely on the proposed regulations until final regulations are issued.

**EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR SECURITIES, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS.**

## SELLING SECURITYHOLDERS

In May 2024, we issued and sold pursuant to a Securities Purchase Agreement, dated May 24, 2024, with the Selling Securityholders in the Private Placement, 2,250,000 Upfront Shares, and \$20.0 million aggregate principal amount of Debentures initially convertible into 10,000,000 shares of our common stock. In June 2024, we registered for resale up to 12,250,000 shares of our common stock by the Selling Securityholders comprising (i) up to 2,250,000 Upfront Shares and (ii) up to 10,000,000 shares of common stock issuable upon conversion of the Debentures. In December 2024, we entered into the Amendment with the Selling Securityholders to amend certain terms of the Debentures, including certain repayment terms and an adjustment to the Conversion Price. As a result of this Conversion Price adjustment, the remaining outstanding aggregate principal amount of the Debentures will be convertible into an additional 45,555,556 Conversion Shares. As consideration for, among other things, the amendment to the repayment terms of the Debentures pursuant to the Amendment, we have issued to the Selling Securityholders in the Private Placement 5,000,000 Private Placement Shares. This prospectus relates to the resale by the Selling Security Holders of up to 50,555,556 shares of common stock, comprising (i) up to 45,555,556 Conversion Shares and (ii) up to 5,000,000 Private Placement Shares. We will not receive any proceeds from the resale by the Selling Securityholders of the Shares described in this prospectus. In connection with Purchase Agreement, we agreed to register the Conversion Shares and the Private Placement Shares with the SEC. The Selling Securityholders, which term includes any additional selling stockholder listed in a prospectus supplement, and their donees, pledgees, assignees, transferees, distributees or other successors in interest selling securities received after the date of this prospectus from the Selling Securityholders as a non-sale transfer, may from time to time offer and sell the Shares pursuant to this prospectus or any applicable prospectus supplement.

The following table sets forth certain information as of the date of this prospectus, concerning the principal amount of Shares beneficially owned and the Shares that may be offered from time to time under this prospectus by the Selling Securityholders named in the table. The second column lists the number of shares of common stock beneficially owned by each Selling Securityholder, based on its ownership of the shares of common stock and Debentures, as of January 2, 2025, assuming conversion of the Debentures held by the Selling Securityholders on that date, without regard to any limitations on conversion.

The third column lists the shares of common stock being offered by this prospectus by the Selling Securityholders.

We prepared this table based on the information supplied to us by the Selling Securityholders named in the table and we have not sought to verify such information. This table only reflects information the Selling Securityholders provided us. Information concerning the Selling Securityholders may change from time to time and any changed information will be set forth in supplements to this prospectus if and when necessary.

This prospectus generally covers the resale of the sum of (i) the maximum number of Conversion Shares issuable upon conversion of the Debentures (but only to the extent that such Conversion Shares would be issuable as a result of the Amendment and have not previously been registered by us), determined as if the outstanding Debentures were converted in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the conversion of the debentures, and (ii) the number of Private Placement shares issued to the Selling Securityholders in the private placement described above. The fourth column assumes the sale of all of the shares offered by the Selling Securityholders pursuant to this prospectus.

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Under the terms of the Debentures, a Selling Securityholder may not convert the Debentures to the extent such conversion would cause such Selling Securityholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% of our then outstanding common stock following such conversion, excluding for purposes of such determination shares of common stock issuable upon conversion of such Debentures which have not been converted. The number of shares in the second and fourth columns do not reflect this limitation. The Selling Securityholder may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

Name	Shares of Common Stock			
	Number of Shares of Common Stock Beneficially Owned Prior to the Offering <sup>(1)</sup>	Maximum Number of Shares of Common Registered Hereunder for Sale	Common Stock Beneficially Owned Upon Completion of the Offering <sup>(2)</sup>	
			Number of Shares	Percentage
Alto Opportunity Master Fund, SPC - Segregated Master Portfolio B <sup>(3)</sup>	8,425,927	8,425,927	0	0%
FourWorld Deep Value Opportunities Fund I, LLC	7,021,606	7,021,606	0	0%
JGB Capital LP	870,679	870,679	0	0%
JGB Capital Offshore Ltd.	17,947,222	17,947,222	0	0%
JGB Partners LP	16,290,122	16,290,122	0	0%

- (1) Figures in this column include the Private Placement Shares and the Conversion Shares, in each case, without taking account of any limitation on conversion and exercise pursuant to the terms of the Debentures.
- (2) Assumes that, after the date of this prospectus and prior to completion of this offering, none of the Selling Securityholders (i) acquires additional shares of our common stock or other securities or (ii) sells or otherwise disposes of shares of our common stock or other securities held by such selling shareholders as of the date hereof and not offered hereby
- (3) The address of the Selling Shareholder is c/o Ayrton Capital LLC, 55 Post Rd West, 2nd Floor, Westport, CT 06880. Ayrton Capital LLC, the investment manager to Alto Opportunity Master Fund, SPC - Segregated Master Portfolio B, has discretionary authority to vote and dispose of the shares held by Alto Opportunity Master Fund, SPC - Segregated Master Portfolio B and may be deemed to be the beneficial owner of these shares. Waqas Khatri, in his capacity as Managing Member of Ayrton Capital LLC, may also be deemed to have investment discretion and voting power over the shares held by Alto Opportunity Master Fund, SPC - Segregated Master Portfolio B. Ayrton Capital LLC and Mr. Khatri each disclaim any beneficial ownership of these shares.

## PLAN OF DISTRIBUTION

We are registering the resale by the Selling Securityholders or their permitted transferees from time to time of up to 50,555,556 shares of our common stock comprising (i) up to 45,555,556 Conversion Shares and (ii) the 5,000,000 Private Placement Shares. We will not receive any of the proceeds from the sale of the Shares by the Selling Securityholders. The aggregate proceeds to the Selling Securityholders will be the purchase price of the securities less any discounts and commissions borne by the Selling Securityholders. We are required to pay all fees and expenses incident to the registration of the securities to be offered and sold pursuant to this prospectus. The Selling Securityholders will bear all commissions and discounts, if any, attributable to its sale of securities.

The shares of common stock beneficially owned by the Selling Securityholders covered by this prospectus may be offered and sold from time to time by the Selling Securityholders. The term "Selling Securityholder" includes any additional selling stockholder listed in a prospectus supplement, and their donees, pledgees, assignees, transferees, distributees or other successors in interest selling securities received after the date of this prospectus from the Selling Securityholders as a non-sale transfer, may from time to time offer and sell the Shares pursuant to this prospectus or any applicable prospectus supplement. The Selling Securityholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. Each Selling Securityholder may sell its securities by one or more of, or a combination of, the following methods:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- block trades in which the broker-dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- an over-the-counter distribution in accordance with the rules of Nasdaq;
- through trading plans entered into by such Selling Securityholder pursuant to Rule 10b5-1 under the Exchange Act, that are in place at the time of an offering pursuant to this prospectus and any applicable prospectus supplement hereto that provide for periodic sales of its securities on the basis of parameters described in such trading plans;
- short sales;
- distribution to employees, members, limited partners or stockholders of such Selling Securityholder, as applicable; through the writing or settlement of options or other hedging transaction, whether through an options exchange or otherwise;
- by pledge to secured debts and other obligations;
- delayed delivery arrangements;
- to or through underwriters or broker-dealers;
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or at prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- in privately negotiated transactions;
- in options transactions;
- through a combination of any of the above methods of sale; or
- any other method permitted pursuant to applicable law.

In addition, any securities that qualify for sale pursuant to Rule 144 or another exemption from registration under the Securities Act or other such exemption may be sold under Rule 144 or such other exemption rather than pursuant to this prospectus.

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To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with distributions of the securities or otherwise, the Selling Securityholders may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of the securities in the course of hedging the positions they assume with the Selling Securityholders. The Selling Securityholders may also sell the securities short and redeliver the securities to close out such short positions. The Selling Securityholders may also enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The Selling Securityholders may also pledge securities to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution, may effect sales of the pledged securities pursuant to this prospectus (as supplemented or amended to reflect such transaction).

In effecting sales, broker-dealers or agents engaged by the Selling Securityholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the Selling Securityholders in amounts to be negotiated immediately prior to the sale.

In order to comply with the securities laws of certain states, if applicable, the securities must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We also have agreed to indemnify the Selling Securityholders and certain other persons against certain liabilities in connection with the offering of Purchase Warrant Shares offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable.

We have advised the Selling Securityholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of securities in the market and to the activities of the Selling Securityholders and any of their affiliates. In addition, we will make copies of this prospectus available to the Selling Securityholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The Selling Securityholders may indemnify any broker-dealer that participates in transactions involving the sale of the securities against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of securities is made, if required, a prospectus supplement will be distributed that will set forth the number of securities being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallocated or paid to any dealer, and the proposed selling price to the public.

## **LEGAL MATTERS**

The validity of the Shares has been passed upon by Cooley LLP, San Diego, California.

## **EXPERTS**

The consolidated financial statements of Bionano Genomics, Inc. as of December 31, 2023 and 2022 and for each of the years then ended incorporated by reference in this prospectus and in the registration statement of which this prospectus forms a part have been so incorporated in reliance on the report of BDO USA, P.C., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting. The report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

## **WHERE YOU CAN FIND ADDITIONAL INFORMATION**

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and do not contain all of the information set forth or incorporated by reference in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC, including Bionano. The address of the SEC website is [www.sec.gov](http://www.sec.gov).

We maintain a website at [www.bionanogenomics.com](http://www.bionanogenomics.com). Information contained in or accessible through our website does not constitute a part of this prospectus.



**INCORPORATION OF CERTAIN INFORMATION BY REFERENCE**

The SEC allows us to “incorporate by reference” information into this prospectus supplement, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus supplement is 001-38613. The documents incorporated by reference into this prospectus supplement contain important information about us that you should read.

The following documents are incorporated by reference into this document:

- our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on [March 5, 2024](#);
- our Quarterly Report on Form 10-Q for the three-month period ended September 30, 2024, filed with the SEC on [November 14, 2024](#);
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2023 from our definitive proxy statement relating to our 2024 annual meeting of securityholders, filed with the SEC on [April 26, 2024](#).
- our Current Reports on Form 8-K (other than information furnished rather than filed) filed with the SEC on [February 28, 2024](#) (with respect to Items 1.01 and 9.01 only), [March 5, 2024](#) (with respect to Item 2.05 only), [April 5, 2024](#) (with respect to Items 1.01 and 9.01 only), [April 8, 2024](#), [May 8, 2024](#) (with respect to Item 2.05 only) and [May 28, 2024](#) (with respect to Items 1.01, 1.02, 2.03, 3.02, 8.01 and 9.01 only), [June 21, 2024](#), [July 8, 2024](#), [July 18, 2024](#), [September 9, 2024](#) (with respect to Items 2.05 and 5.02 only), [October 10, 2024](#), [October 31, 2024](#), [December 2, 2024](#) and [January 3, 2025](#); and
- the description of our common stock which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed on [August 17, 2018](#), including any amendments or reports filed for the purposes of updating this description.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have “furnished” to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus. All filings filed by us pursuant to the Exchange Act, after the date of the initial filing of this registration statement and prior to the effectiveness of such registration statement (excluding information furnished pursuant to Items 2.02 and 7.01 of Form 8-K) shall also be deemed to be incorporated by reference into the prospectus.

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

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with this prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents to Bionano Genomics, Inc. 9540 Towne Centre Drive, Suite 100, San Diego, California 92121; telephone: (858) 888-7600.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

**bionano<sup>TM</sup>**

**50,555,556 Shares of our Common Stock**

**PROSPECTUS**

The date of this prospectus is \_\_\_\_\_, 2025

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

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

The following table sets forth the estimated costs and expenses payable by us in connection with the offering of the securities being registered. All the amounts shown are estimates, except for the SEC registration fee.

SEC registration fee	\$ 1,652.50
Accounting fees and expenses	\$ 7,500
Legal fees and expenses	\$ 100,000
Printing and miscellaneous expenses	\$ 5,500
Total	\$114,652.50

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

We are incorporated under the laws of the State of Delaware. Section 145 of the General Corporation Law of the State of Delaware provides that a Delaware corporation may indemnify any persons who were, are, or are threatened to be made, parties to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was an officer, director, employee or agent of such corporation, or is or was serving at the request of such corporation as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may indemnify any persons who were, are, or are threatened to be made, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit provided such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses (including attorneys' fees) actually and reasonably incurred.

Our amended and restated certificate of incorporation, as amended, and amended and restated bylaws provide for the indemnification of our directors and officers to the fullest extent permitted under the General Corporation Law of the State of Delaware. Section 102(b)(7) of the General Corporation Law of the State of Delaware permits a corporation to provide in its certificate of incorporation that a director or officer of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director or officer, except for liability for any:

- transaction from which the director or officer derives an improper personal benefit;
- act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- in the case of a director, unlawful payment of dividends or redemption of shares;
- breach of a director's duty of loyalty to the corporation or its stockholders; or
- in the case of an officer, action by or in the right of the corporation.

Our amended and restated certificate of incorporation, as amended, includes such a provision with respect to our directors. Expenses incurred by any officer or director in defending any such action, suit or proceeding in advance of its final disposition will be paid by us upon delivery to us of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified by us.

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Section 174 of the General Corporation Law of the State of Delaware provides, among other things, that a director who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption, may be held liable for such actions. A director who was either absent when the unlawful actions were approved or dissented at the time may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

As permitted by the General Corporation Law of the State of Delaware, we have entered, and continue to enter, into separate indemnity agreements with each of our directors and executive officers that require us to indemnify such persons against any and all costs and expenses (including attorneys', witness or other professional fees) actually and reasonably incurred by such persons in connection with any action, suit or proceeding (including derivative actions), whether actual or threatened, to which any such person may be made a party by reason of the fact that such person is or was a director or officer or is or was acting or serving as an officer, director, employee or agent of ours or any of our affiliated enterprises. Under these agreements, we are not required to provide indemnification for certain matters, including:

- indemnification beyond that permitted by the General Corporation Law of the State of Delaware;
- indemnification for any proceeding with respect to the unlawful payment of remuneration to the director or officer;
- indemnification for certain proceedings involving a final judgment that the director or officer is required to disgorge profits from the purchase or sale of our stock;
- indemnification for proceedings involving a final judgment that the director's or officer's conduct was in bad faith, knowingly fraudulent or deliberately dishonest or constituted willful misconduct or a breach of his or her duty of loyalty, but only to the extent of such specific determination;
- indemnification for proceedings or claims brought by an officer or director against us or any of our directors, officers, employees or agents, except for (1) claims to establish a right of indemnification or proceedings, (2) claims approved by our board of directors, (3) claims required by law, (4) when there has been a change of control as defined in the indemnification agreement with each director or officer, or (5) by us in our sole discretion pursuant to the powers vested to us under the General Corporation Law of the State of Delaware;
- indemnification for settlements the director or officer enters into without our consent; or
- indemnification in violation of any undertaking required by the Securities Act or in any registration statement we file.

The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder.

We have an insurance policy in place that covers our officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act or otherwise.

Pursuant to certain underwriting agreements we may enter, the underwriters are obligated, under some circumstances, to indemnify our directors, officers and controlling persons against specified liabilities, including liabilities under the Securities Act.

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**Item 16. Exhibits.**

<b>Exhibit Number</b>	<b>Description</b>
<a href="#">3.1</a>	Amended and Restated Certificate of Incorporation, as amended (incorporated by reference to Exhibit 3.1 of the Registrant’s Quarterly Report on Form 10-Q, filed with the SEC on November 8, 2023).
<a href="#">3.2</a>	Certificate of Amendment to Amended and Restated Certificate of Incorporation, as amended (incorporated by reference to Exhibit 3.1 of the Registrant’s Current on Form 8-K, filed with the SEC on August 4, 2023).
<a href="#">3.3</a>	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 of the Registrant’s Current Report on Form 8-K, filed with the SEC on August 24, 2018).
<a href="#">3.4</a>	Amendment to Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 of the Registrant’s Current Report on Form 8-K, filed with the SEC on April 14, 2023).
<a href="#">5.1</a>	Opinion of Cooley LLP.
<a href="#">10.1</a>	Form of Settlement Agreement and First Amendment to Debentures dated December 30, 2024, by and among the Company and the Selling Securityholders named therein (incorporated by reference to Exhibit 4.1 of the Registrant’s Current Report on Form 8-K, filed with the SEC on January 3, 2025).
<a href="#">23.1</a>	Consent of BDO USA P.C., independent registered public accounting firm.
<a href="#">23.2</a>	Consent of Cooley LLP (included in Exhibit 5.1).
<a href="#">24.1</a>	Power of Attorney (included on signature page).
<a href="#">107</a>	Filing Fee Table.

**Item 17. Undertakings.**

- (a) The undersigned registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
    - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
    - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and
    - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
- provided, however*, that the undertakings set forth in paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this registration statement or are contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.
- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
  - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
  - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (b) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on the 3rd day of January, 2025.

**BIONANO GENOMICS, INC.**

By: /s/ R. Erik Holmlin, Ph.D.

R. Erik Holmlin, Ph.D.

President and Chief Executive Officer

**POWER OF ATTORNEY**

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints R. Erik Holmlin, Ph.D. as his or her true and lawful attorney-in-fact and agent, with the full power of substitution and resubstitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments (including post effective amendments, exhibits thereto and other documents in connection therewith) to this Registration Statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462 under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute, may lawfully do or cause to be done by virtue hereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ R. Erik Holmlin, Ph.D.</u> R. Erik Holmlin, Ph.D.	President, Chief Executive Officer and Director <i>(Principal Executive and Financial Officer)</i>	January 3, 2025
<u>/s/ Mark Adamchak</u> Mark Adamchak	Principal Accounting Officer <i>(Principal Accounting Officer)</i>	January 3, 2025
<u>/s/ David L. Barker, Ph.D.</u> David L. Barker, Ph.D.	Director	January 3, 2025
<u>/s/ Yvonne Linney, Ph.D.</u> Yvonne Linney, Ph.D.	Director	January 3, 2025
<u>/s/ Albert A. Luderer, Ph.D.</u> Albert A. Luderer, Ph.D.	Director	January 3, 2025
<u>/s/ Hannah Mamuszka</u> Hannah Mamuszka	Director	January 3, 2025
<u>/s/ Aleksandar Rajkovic, M.D., Ph.D.</u> Aleksandar Rajkovic, M.D., Ph.D.	Director	January 3, 2025
<u>/s/ Christopher Twomey</u> Christopher Twomey	Director	January 3, 2025
<u>/s/ Kristiina Vuori, M.D., Ph.D.</u> Kristiina Vuori, M.D., Ph.D.	Director	January 3, 2025
<u>/s/ Vincent Wong, J.D., M.B.A.</u> Vincent Wong, J.D., M.B.A.	Director	January 3, 2025





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

January 3, 2025

Bionano Genomics, Inc.  
9540 Towne Centre Drive, Suite 100  
San Diego, California 92121

Ladies and Gentlemen:

We have acted as counsel to Bionano Genomics, Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a registration statement on Form S-3 (the "**Registration Statement**") with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), including a related prospectus included in the Registration Statement, covering the registration for resale by certain selling securityholders named therein (the "**Selling Securityholders**"), of 50,555,556 shares of the Company's common stock, par value \$0.0001 per share (the "**Common Stock**"), consisting of (i) 5,000,000 shares of Common Stock (the "**New Shares**") issued pursuant to that certain Settlement Agreement and First Amendment to Debentures, by and among the Company and the Selling Securityholders dated December 21, 2024 (the "**Agreement**") and (ii) up to 45,555,556 shares of Common Stock (the "**Debenture Shares**" and together with the New Shares, the "**Shares**"), issuable upon conversion of the outstanding aggregate principal amount of senior secured convertible debentures due May 24, 2026 (the "**Debentures**") less 10,000,000 Debenture Shares previously registered pursuant to the Registration Statement on Form S-3 (File No. 333-280098) filed with the Commission by the Company on June 10, 2024.

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

With regard to our opinion as to the Debenture Shares, we express no opinion to the extent that future issuances of securities of the Company, antidilution adjustments to outstanding securities of the Company or other matters may cause the Debentures to be convertible into more shares of Common Stock than the number then available for issuance by the Company.

On the basis of the foregoing, in reliance thereon and subject to the qualifications set forth herein, we are of the opinion that (i) the New Shares are validly issued, fully paid and nonassessable and (ii) the Debenture Shares, when issued by the Company upon conversion of the Debentures pursuant to the terms of the Debentures, will be validly issued, fully paid and nonassessable.

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



Bionano Genomics, Inc.  
January 3, 2025  
Page Two

We consent to the reference to our firm under the heading "Legal Matters" in the Prospectus and to the filing of this opinion as an exhibit to the Registration Statement. In giving such consents, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

**COOLEY LLP**

By: /s/ Thomas A. Coll  
Thomas A. Coll

COOLEY LLP 10265 SCIENCE CENTER DRIVE SAN DIEGO, CA 92121-1117  
T: (858) 550-6000 F: (858) 550-6420 COOLEY.COM

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Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated March 5, 2024, relating to the consolidated financial statements of Bionano Genomics, Inc. (the “Company”) appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2023. Our report contains an explanatory paragraph regarding the Company’s ability to continue as a going concern.

We also consent to the reference to us under the caption “Experts” in the Prospectus.

/s/ BDO USA, P.C.  
San Diego, California

January 3, 2025

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## Calculation of Filing Fee Tables

**Form S-3**  
(Form Type)

**Bionano Genomics, Inc.**  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Share(2)	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common Stock, par value \$0.0001 per share	457(c)	5,000,000	\$0.2135	\$1,067,500	0.00015310	\$163.43
Fees to Be Paid	Equity	Common Stock, par value \$0.0001 per share, underlying debentures	457(c)	45,555,556	\$0.2135	9,726,111.21	0.00015310	\$1,489.07
	<b>Total Offering Amounts</b>					\$10,793,611.21		\$1,652.50
	<b>Total Fees Previously Paid</b>							—
	<b>Total Fee Offsets</b>							—
	<b>Net Fee Due</b>							\$1,652.50

(1) This Registration Statement registers the resale of up to 50,555,556 shares of common stock (the “*Common Stock*”) of the Registrant comprising (i) 5,000,000 shares of Common Stock held by the selling stockholders (the “*Selling Securityholders*”) named in this Registration Statement on Form S-3 (“*Registration Statement*”) and (ii) 45,555,556 shares of Common Stock issuable upon the conversion of the remaining outstanding aggregate principal amount of senior secured convertible debentures due May 24, 2026, at a price per share of \$0.27, less 10,000,000 shares previously registered on a Registration Statement on Form S-3 (File No. 333-280098), filed with the Securities and Exchange Commission on June 10, 2024. Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “*Securities Act*”), this Registration Statement also covers any additional number of shares of common stock issuable upon stock splits, stock dividends, or other distribution, recapitalization or similar events with respect to the shares of common stock being registered pursuant to this registration statement.

(2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act, based on the average of the high and low price per share of the Registrant’s common stock as reported on The Nasdaq Capital Market on December 27, 2024.