Bionano Announces Largest OGM Study of T-Cell Acute Lymphoblastic Leukemia

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SAN DIEGO, May 26, 2026 (GLOBE NEWSWIRE) -- Bionano Genomics, Inc. (Nasdaq: BNGO) today announced publication of a peer-reviewed study in *Modern Pathology* showing that optical genome mapping (OGM) detected genomic abnormalities in 97.8% of T-cell acute lymphoblastic leukemia (T-ALL) cases — nearly double the 55% detection rate achieved by conventional cytogenetic analysis. Conducted by researchers at The University of Texas MD Anderson Cancer Center and Johns Hopkins University School of Medicine and representing one of the most comprehensive genomic analyses of T-ALL to date, the study underscores OGM's potential to transform how this aggressive blood cancer is studied and understood.

T-ALL is an aggressive form of pediatric and adult leukemia driven by a wide variety of complex genetic changes, many of which are too subtle or structurally complex to be detected by traditional methods. The disease is notoriously difficult to characterize fully, limiting the ability of researchers to study its biology, classify subtypes, and develop targeted therapies.

The 91-subject study compared OGM head-to-head against conventional karyotyping and next-generation sequencing (NGS) — the standard tools for evaluating T-ALL. Where karyotyping identified abnormalities in just 55% of cases, OGM found them in 97.8% of cases, and provided additional genomic insights beyond standard methods in approximately 70% of the cases — all from OGM's single workflow.

Key Highlights:

- **91 cases:** of T-ALL cases analyzed across three platforms — OGM, conventional karyotyping, and NGS — making this study the largest OGM study of T-ALL conducted to date.
- **High success rate for finding abnormalities:** OGM identified chromosomal abnormalities in 97.8% of cases, compared to 55% by conventional karyotyping — a dramatic improvement in detection for a disease where missed findings can leave the biology incompletely understood.
- **Broader picture in 70% of cases:** OGM delivered clinically relevant genomic information beyond karyotyping in approximately 70% of cases, uncovering abnormalities that standard methods missed — all without requiring additional testing.
- **24 known + 21 novel gene fusions identified:** OGM detected gene rearrangements in 80% of cases, including 24 known recurrent fusions and 21 newly identified fusions, pointing to potential new targets for T-ALL research.
- **Comprehensive sequence variant and copy number profiling:** OGM identified copy number changes in 93% of cases. NGS detected sequence variants in 92% of cases. The gene most frequently found to harbor variants was *NOTCH1* (57% of cases).
- **Disease subtypes decoded:** OGM uncovered distinct genomic patterns across T-ALL subtypes, supporting more precise biological classification of this heterogeneous disease.
- **OGM can streamline workflows for T-ALL.** T-ALL presents particular challenges for standard genomic analysis: samples often yield poor-quality material for karyotyping, and many of the most biologically important genetic changes are subtle, small-scale, or driven by rearrangements in non-coding regions of the genome. Conventional approaches typically require multiple sequential analyses to piece together a complete picture — a process that is time-consuming, costly, and incomplete. OGM can address these limitations with a genome-wide approach that captures the full landscape of genetic variation in a single workflow.

"This publication further strengthens the growing body of evidence supporting OGM as a powerful tool for resolving the genomic complexity of challenging childhood and adult blood cancers like T-ALL, 50% of which remain unsolved by legacy methods, such as, karyotyping. This study, as one of the first and largest of its kind in T-ALL, demonstrates the complementarity that OGM and NGS can provide and shows how OGM can be particularly well-suited to T-ALL's unique challenges — including poor sample quality, subtle rearrangements, and a wide range of genomic targets — capturing recurrent and novel alterations in a single pass that would otherwise require multiple sequential tests," said Alka Chaubey, PhD, FACMG, chief medical officer of Bionano. Dr. Chaubey continued, "the ability to uncover subtle and complex rearrangements in diseases like T-ALL can give researchers a far more complete picture of the biology — and reinforces why comprehensive structural variant analysis matters in blood cancer research."

The full publication, *Comprehensive Cytogenomic Profiling of T-Lymphoblastic Leukemia Using Optical Genome Mapping, Karyotyping, and Next-Generation Sequencing*, is available in *Modern Pathology* at: https://www.modernpathology.org/article/S0893-3952(26)00029-3/

About Bionano Genomics

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

For more information, visit www.bionano.com or www.bionanolaboratories.com.

Bionano's products are for research use only and not for use in diagnostic procedures.

Forward-Looking Statements of Bionano Genomics

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in this press release, including statements regarding our future results of operations or financial condition, business strategy and plans, and objectives of management for future operations, are forward-looking statements. Words such as "anticipate," "believe," "can," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "support," "target," "will," or "would" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) convey uncertainty of future events or outcomes and are intended to identify these forward-looking statements. Forward-looking statements include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things; the ability and utility of OGM to substantially improve detection of relevant cytogenomic abnormalities in T-ALL compared with conventional karyotyping; the ability and utility of OGM to transform how this aggressive blood cancer is studied and understood; the ability and utility of OGM to provide critical genomic information that complements NGS; the ability and utility of OGM to streamline workflows and address limitations of standard genomic analysis with a genome-wide approach that captures the full landscape of genetic variation in a single workflow; the ability of OGM to outperform legacy cytogenomic methods; continued research, presentations and publications involving OGM, its utility compared to traditional cytogenetics and our technologies; our ability to drive adoption of OGM and our technology solutions; and any other statements that are not of historical fact. Each of these forward-looking statements involves risks and uncertainties. Accordingly, investors and prospective investors are cautioned not to place undue reliance on these forward-looking statements as they involve inherent risk and uncertainty (both general and specific) and should note that they are provided as a general guide only and should not be relied on as an indication or guarantee of future performance. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. Factors that may cause such a difference include the risks and uncertainties associated with: the failure of OGM to substantially improve detection of relevant cytogenomic abnormalities in T-ALL compared with conventional karyotyping; the failure of OGM to transform how this aggressive blood cancer is studied and understood; the failure of OGM to provide critical genomic information that complements NGS; the failure of OGM to streamline workflows and address limitations of standard genomic analysis with a genome-wide approach that captures the full landscape of genetic variation in a single workflow; the failure of OGM to outperform legacy cytogenomic methods; our ability to obtain sufficient financing to fund our strategic plans and commercialization efforts and our ability to continue as a "going concern," which requires us to manage costs and obtain significant additional financing to fund our strategic plans and commercialization efforts; the risk that if we fail to obtain additional financing we may seek relief under applicable insolvency laws; the impact of adverse geopolitical and macroeconomic events, such as the ongoing international conflicts and uncertain market conditions, including inflation, tariffs, and supply chain disruptions, on our business and the global economy; general market conditions; changes in the competitive landscape and the introduction of competitive technologies or improvements to existing technologies; changes in our strategic and commercial plans; the ability of medical and research institutions to obtain funding to support adoption or continued use of our technologies; study results that differ or contradict the results mentioned in this press release; and the risks and uncertainties associated with our business and financial condition in general, including the risks and uncertainties including those described in our filings with the Securities and Exchange Commission ("SEC"), including, without limitation, our Annual Report on Form 10-K for the year ended December 31, 2025, our Quarterly Reports on Form 10-Q and in other filings subsequently made by us with the SEC. All forward-looking statements contained in this press release speak only as of the date on which they were made and are based on management's assumptions and estimates as of such date. We do not undertake any obligation to publicly update any forward-looking statements, whether as a result of the receipt of new information, the occurrence of future events or otherwise, except as may be required by law.

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