



Bionano Genomics Announces Publication of a New Study Using OGM to Investigate Chromosome Instability during Culture of Induced Pluripotent Stem Cells

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SAN DIEGO, July 21, 2022 (GLOBE NEWSWIRE) -- Bionano Genomics, Inc. (Nasdaq: BNGO), today announced publication of a study using optical genome mapping (OGM) to investigate numerical and structural changes to two induced pluripotent stem cell (iPSC) lines, WTC-11 and Tuba1-GFP, during long-term culturing. This research provides scientific and practical support for the use of OGM workflows in regenerative medicine due to OGM's ability to detect hundreds of structural variants (SVs), many of which had not been seen by other cytogenetic methods and which may impact the genomic integrity of iPSCs.

iPSCs have the potential to provide greater clinical impact to patients than stem cells while avoiding possible immunological rejection because they can be derived from the patient being treated. In order to be used for gene editing, iPSCs must be created and expanded in culture, opening the possibility for the accrual of chromosomal variants over time. In the study, published in *Genes*, the authors followed two cell lines over 150 days of continuous culture, or 50 passages, and found significant changes to the genome in both using OGM. Additionally, hundreds of SVs not found in the internal control database were also observed in both cell lines and accumulated over the course of the study, potentially impacting gene expression and cell survival. The authors also suggest that, because of the accumulation of chromosome changes over time and the unknown effects on iPSCs in therapy, culture times should be limited.

"Bionano is expanding into markets where OGM is an alternative workflow for cytogenetics in genetic diseases and cancer. In addition, we are driving adoption of OGM into the academic research community to enable novel discoveries connected to structural variations. This paper outlines the utility of OGM for pharmaceutical research and drug development, which is a segment of the genomics market that Bionano is also targeting," commented Erik Holmlin, PhD, president and chief executive officer of Bionano Genomics.

This publication is available at: <https://www.mdpi.com/2073-4425/13/7/1157>

About Bionano Genomics

Bionano Genomics 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 OGM solutions, diagnostic services and software. The Company offers OGM solutions for applications across basic, translational and clinical research. Through its Lineagen business, the Company also provides diagnostic testing for patients with clinical presentations consistent with autism spectrum disorder and other neurodevelopmental disabilities. Through its BioDiscovery business, the Company also offers an industry-leading, platform-agnostic software solution, which integrates next-generation sequencing and microarray data designed to provide analysis, visualization, interpretation and reporting of copy number variants, single-nucleotide variants and absence of heterozygosity across the genome in one consolidated view. For more information, visit www.bionanogenomics.com, www.lineagen.com or www.biodiscovery.com.

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. Words such as "may," "can" 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 potential for SVs to impact iPSCs and the ability for OGM workflows to detect them, and OGM's potential value in the pharmaceutical research and drug development field. Each of these forward-looking statements involves risks and uncertainties. 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 adoption of OGM in new fields, including the pharmaceutical research and drug development field, the impact of the COVID-19 pandemic 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; failure of future study results to support those demonstrated in the paper referenced in this press release; changes in our strategic and commercial plans; our ability to obtain sufficient financing to fund our strategic plans and commercialization efforts; the ability of medical and research institutions to obtain funding to support adoption or continued use of our technologies; and the risks and uncertainties associated with our business and financial condition in general, including the risks and uncertainties described in our filings with the Securities and Exchange Commission, including, without limitation, our Annual Report on Form 10-K for the year ended December 31, 2021 and in other filings subsequently made by us with the Securities and Exchange Commission. 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.

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