NuProbe Global Adopts Bionano's Saphyr® System to Develop Products in Reproductive Health and Oncology Applications

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SAN DIEGO and SHANGHAI, China, Sept. 07, 2021 (GLOBE NEWSWIRE) -- Bionano Genomics, Inc. (Nasdaq: BNGO) announced today that NuProbe Global, a global molecular diagnostics company based in Shanghai, China and Houston, Texas, has adopted Bionano's Saphyr system for optical genome mapping (OGM) to integrate their Quantitative Amplicon Sequencing (QASeq) and Blocker Displacement Amplification (BDA) technologies for research and product development in the fields of reproductive health and oncology liquid biopsies.

"The Bionano OGM system provides direct and unambiguous identification and characterization of large-scale DNA structural variants without complex bioinformatics. NuProbe's BDA technology helps zoom in on low frequency variants with single-base resolution. We believe this combination can provide genomics and clinical researchers with the gamut of DNA variant information from large to small," said Dr. George Church, Professor of Genetics at Harvard Medical School and a member of NuProbe's Scientific Advisory Board.

Bionano's Saphyr system uses OGM, which relies on single molecule detection, to identify all classes of structural variants. OGM is used by researchers and clinicians to identify structural variants associated with genetic diseases and cancer to potentially develop therapies and novel diagnostics. Compared with traditional methods such as karyotyping, fluorescent *in-situ* hybridization (FISH) and microarrays, OGM has the advantages of higher resolution, whole-genome coverage, user-friendly workflow, intuitive result presentation, and can accurately detect balanced translocations, inversions, repeat expansions and contractions which are difficult to detect using other methods. We believe no other platform can more cost-effectively detect all these classes of structural variants than OGM.

"Bionano's single-molecule OGM system can detect structural variants and provide breakpoint information of DNA fusions at a resolution of 5kb," commented David Yu Zhang, PhD, Head of Innovation at NuProbe USA. "When combining it with NuProbe's QASeq technology, we can obtain accurate DNA breakpoint location information, thus facilitating the research in gene fusion."

QASeq is an innovative amplicon sequencing technology that uses unique molecular identifiers (UMIs) and multiplexed library construction technology to achieve accurate detection and quantitation of mutations and copy number variations in FFPE tissue, fresh or frozen tissue or cfDNA samples from blood. QASeq has high conversion yield and sensitivity. When coupled with NuProbe's proprietary bioinformatics, it enables rapid development of custom NGS products with higher limit of detection in CNV detection of tumor cells than traditional methods such as FISH.

BDA is a novel PCR-based mutation enrichment technology that can effectively reduce wild-type amplification efficiency and enlarge low-frequency mutation signals through innovative thermodynamic design in PCR amplification cycle. BDA enables detecting SNVs with variant allele frequency (VAF) as low as 0.01%. BDA can be widely applied to various molecular diagnostic platforms including PCR, first-generation capillary sequencing, second-generation high-throughput sequencing, third-generation single-molecule sequencing, and nucleic acid mass spectrometry.

"Currently, in both reproductive health and oncology, some variants cannot be detected by NGS, such as structural variants >1kb, and some gene fusions are under-detected," said Yingshuang Chai, CEO of NuProbe. "Bionano's Saphyr system is a transformative cytogenetic technology that we have evaluated as a powerful complement to existing NGS technologies. Combined with our QASeq and BDA technologies, it can effectively help clinicians to identify the location and causes of disease."

"Saphyr is the leading platform capable of detecting structural variants present at low fraction in complex cancer samples," commented Erik Holmlin, PhD, CEO of Bionano Genomics. "NuProbe's technology allows for the detection of low-abundance point mutations. Combined, they can provide researchers and clinicians with a more complete picture of the mutational burden of a tumor sample than any single technology can by itself. We are excited to see how this combination of our technologies' strengths can allow NuProbe to develop a potentially superior product for genome analysis in reproductive health and oncology."

About Bionano Genomics
Bionano is a genome analysis company providing tools and services based on its Saphyr system to scientists and clinicians conducting genetic research and patient testing, and providing diagnostic testing for those with autism spectrum disorder (ASD) and other neurodevelopmental disabilities through its Lineagen business. Bionano's Saphyr system is a research use only platform for ultra-sensitive and ultra-specific structural variation detection that enables researchers and clinicians to accelerate the search for new diagnostics and therapeutic targets and to streamline the study of changes in chromosomes, which is known as cytogenetics. The Saphyr system is comprised of an instrument, chip consumables, reagents and a suite of data analysis tools. Bionano provides genome analysis services to provide access to data generated by the Saphyr system for researchers who prefer not to adopt the Saphyr system in their labs. Lineagen has been providing genetic testing services to families and their healthcare providers for over nine years and has performed over 65,000 tests for those with neurodevelopmental concerns. For more information, visit www.bionanogenomics.com or www.lineagen.com.

About NuProbe Global
NuProbe is a cutting-edge genomics and molecular diagnostics company with revolutionary molecular diagnostic technologies to improve the sensitivity of sequencing mutations and copy number variations by over 10-fold. NuProbe has sites in Houston, USA, Shanghai, China and Suzhou, China. NuProbe's vision is to offer affordable, timely, and accurate disease state information to enable precision medicine and improve patient outcomes. For more information, visit https://www.nuprobe.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," "will," "expect," "plan," "anticipate," "estimate," "intend" 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 benefits resulting from a combination of our and NuProbe's respective technologies, including superior genome analysis in reproductive health and oncology. 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 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 products; incompatibility between our and NuProbe's technologies; 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; the loss of key members of management and our commercial team; 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, 2020 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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