Metastatic Lung Cancer Study Finds That Bionano's Saphyr Outperforms NGS for the Detection of Structural Variants

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SAN DIEGO, Aug. 03, 2020 (GLOBE NEWSWIRE) -- Bionano Genomics, Inc. (Nasdaq: BNGO), today announced the publication of the first study to utilize its genome imaging system, Saphyr, for the analysis of structural variants (SVs) in lung cancer and metastases. The study, published in Translational Lung Cancer Research by a team of scientists from Fudan University Shanghai Cancer Center and Shanghai Medical College, analyzed SVs using both short-read next-generation sequencing technology (NGS) and Bionano's Saphyr system on a primary lung squamous cell carcinoma sample, and on matched metastases from lymph node and pulmonary vein. The study showed that Saphyr outperformed NGS-based methods in the detection of structural variants to characterize the genetic heterogeneity between the primary tumor and the matched metastases.

Of 1026 large SVs detected on average by Saphyr in each of the tumor types, the NGS-based methods failed to detect an average of 77%. Saphyr identified 52 SVs shared between the metastases, while no shared SVs were found by NGS-based methods.

The study authors stated that Saphyr is more capable of detecting large and complex SVs, without the computational and bioinformatic challenges that come with SV calling from NGS data. They found that like with point mutations and small insertions/deletions detected with NGS, SVs make up a large part of tumor heterogeneity. The authors describe that the combination of NGS and Saphyr allowed for a more comprehensive understanding of the variation between primary tumor and metastases, with Saphyr making up for the inability of NGS to detect large SVs.

Erik Holmlin, Ph.D., CEO of Bionano Genomics commented: "Researchers are increasingly becoming aware of the importance of genome-wide and unbiased detection of structural variants in cancer and of the severe limitations of NGS-based methods to do so. We are pleased to see this publication showing that Saphyr provided a comprehensive view of structural variants in lung cancer, the most commonly occurring cancer worldwide. Unlike short-read sequencing protocols which start with fragmenting the genomic DNA of the tumor, Bionano's genome imaging analyzes long, intact DNA molecules that are hundreds of thousands to millions of basepairs long, which enables Saphyr to detect structural variants that couldn't be identified before. We believe this study and the growing body of publications on Bionano data show that Saphyr is indispensable for personalized medicine and for furthering the understanding of tumorigenesis and cancer progression."

The study is available at http://tlcr.amegroups.com/article/view/40176/html.

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. Bionano's Saphyr system is a 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, and 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. For more information, visit www.bionanogenomics.com.

Forward-Looking Statements

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: Saphyr's capabilities in comparison to NGS-based methods; and Saphyr's potential as an indispensable tool for personalized medicine and furthering understanding of cancer in the medical community. 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; changes in our strategic and commercial plans; our ability to obtain sufficient financing to fund our strategic plans and commercialization efforts; 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, 2019 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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