Twist Bioscience and Biotia Announce Research Use Only Availability of First Hybridization Capture-Based Next-Generation Sequencing SARS-CoV-2 Assay for Characterization and Surveillance of the Virus

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-- Data from Research Use Only Assay and Software Presented at Infectious Disease Week 2020 --

SOUTH SAN FRANCISCO, Calif. & NEW YORK--(BUSINESS WIRE)--Nov. 19, 2020-- Twist Bioscience Corporation (NASDAQ: TWST), a company enabling customers to succeed through its offering of high-quality synthetic DNA using its silicon platform, and Biotia, Inc., a company that uses proprietary analytical software for infectious disease diagnostics, today announced the availability of an important new research tool for the sequencing and surveillance of COVID-19.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20201119005413/en/

The companies have developed the SARS-CoV-2 Next-Generation Sequencing (NGS) Assay, an NGS-based assay for research-use only (RUO). The SARS-CoV-2 NGS RUO Assay is a highly sensitive nucleic acid hybridization capture-based assay used for the detection, characterization, and environmental monitoring of the SARS-CoV-2 virus. It utilizes Twist Bioscience's unique ability to rapidly develop virus-specific panels by DNA synthesis and Biotia's comprehensive data analysis software and reporting capabilities.

The SARS-CoV-2 NGS Assay was validated on a NextSeq® sequencer and identifies all SARS-CoV-2 nucleic acid sequences, to allow for surveillance of how the genetic sequence of the virus is changing. In contrast, a majority of SARS-CoV-2 tests based on polymerase chain reaction (PCR) only identify limited genetic markers of the virus. A recent study compared the performance of three different commercially available NGS library preparation kits confirming that hybridization capture results in more even coverage across all sequences in a sample when compared to PCR-based NGS assays. In addition, the SARS-CoV-2 NGS Assay reports the full sequence of the virus, enabling improved understanding of mutations, genetic variations and the evolution of the virus as it is transmitted.

"While there are many available high-throughput diagnostic tests available for COVID-19, our solution provides sequence data that enables researchers the ability to sequence and surveil the evolution of mutations in the virus over time and geography," said Emily M. Leproust, Ph.D., CEO and co-founder of Twist Bioscience. "Importantly, while many labs are conducting individual sequencing runs for each patient sample, this assay and the accompanying software provide a way to batch about 100 patient samples together, providing actionable information that can then be used to inform public health particularly as we see second and third waves of COVID escalating."

"We are fortunate to be in a position where we can devote our time and resources to fight this global pandemic," commented Niamh O'Hara, Ph.D., CEO and co-founder of Biotia. **"**This novel and insightful COVID-19 solution is an important step to make NGS-based infectious disease surveillance more widely available and to advance COVID-19 research and control."

Biotia presented data from the assay at the Infectious Disease Week (IDWeek) 2020 Annual Meeting that identify 124 genetic mutations not previously described, including 26 in the functionally important spike protein of SARS-CoV-2. The end-to-end solution was validated on 120 clinical samples (60 positive, 60 negative), and confirmed that the SARS-CoV-2 NGS Assay powered by the COVID-DX Software could be used to detect viral RNA in laboratory research settings. It also provided insight into genetic variants to track transmission, identify risk, and predict outcome and therapeutic response. [*Nagy-Szakal et al., SARS-CoV-2 NGS Assay Powered by Biotia COVID-DX Software, IDWeek 2020*]

"This test spans both diagnostic methods and vaccine research," noted Christopher Mason, Ph.D., co-founder of Biotia, "We believe this end-to-end solution brings needed tools into the fight against COVID-19, as well as pioneering these capture methods for tracking other pathogens in the future."

About the Solution

The SARS-CoV-2 NGS Assay is an RUO end-to-end solution intended for the quantitative detection of the SARS-CoV-2 virus from nasopharyngeal (NP), oropharyngeal (OP), anterior nasal and mid-turbinate nasal swabs as well as from nasopharyngeal wash/aspirates, nasal aspirates and bronchoalveolar lavage (BAL) specimens from individuals. The SARS-CoV-2 NGS Assay, which includes Twist Bioscience's SARS-CoV-2 synthetic RNA controls, detects all strains of SARS-CoV-2 in samples with as few as 800 viral copies per milliliter.

The complementary Biotia COVID-DX software provides an RUO report including the presence or absence of SARS-CoV-2 virus, the full sequence of the virus, genetic variants and phylogenetic analysis. FASTQ files (sequencing output) can be generated in laboratories nationwide and submitted to Biotia COVID-DX (v1.0), a cloud-based software to generate RUO reports. Access to the Biotia COVID-DX software is provided through a unique order number emailed to a researcher that includes credits for each kit purchased.

About Biotia

Biotia is a health tech company located in New York, NY that leverages sequencing-based technology and proprietary AI-powered software to rapidly and accurately identify microorganisms and antimicrobial resistance. Their mission is to fight infectious disease by deploying the leading reference library of microbes worldwide. Biotia, a spinout company of Jacobs Technion-Cornell Institute at Cornell Tech has a New York State CLIA lab for

COVID-19 testing affiliated with SUNY Downstate Health Sciences University.

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About Twist Bioscience Corporation

Twist Bioscience is a leading and rapidly growing synthetic biology and genomics company that has developed a disruptive DNA synthesis platform to industrialize the engineering of biology. The core of the platform is a proprietary technology that pioneers a new method of manufacturing synthetic DNA by “writing” DNA on a silicon chip. Twist is leveraging its unique technology to manufacture a broad range of synthetic DNA-based products, including synthetic genes, tools for next-generation sequencing (NGS) preparation, and antibody libraries for drug discovery and development. Twist is also pursuing longer-term opportunities in digital data storage in DNA and biologics drug discovery. Twist makes products for use across many industries including healthcare, industrial chemicals, agriculture and academic research.

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This press release contains forward-looking statements. All statements other than statements of historical facts contained herein, including without limitation, the ability of the SARS-CoV-2 NGS Assay to successfully advance COVID-19 research and control, are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements involve known and unknown risks, uncertainties, and other important factors that may cause Twist Bioscience’s actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the risks and uncertainties of the ability to attract new customers and retain and grow sales from existing customers; risks and uncertainties of rapidly changing technologies and extensive competition in synthetic biology could make the products Twist Bioscience is developing obsolete or non-competitive; scientific unknowns and new information relating to the SARS-CoV-2 virus; the duration, extent and impact of the COVID-19 pandemic; supply chain and other disruptions caused by the COVID-19 pandemic or otherwise; uncertainties of the retention of a significant customer; risks of third party claims alleging infringement of patents and proprietary rights or seeking to invalidate Twist Bioscience’s patents or proprietary rights; and the risk that Twist Bioscience’s proprietary rights may be insufficient to protect its technologies. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Twist Bioscience’s business in general, see Twist Bioscience’s risk factors set forth in Twist Bioscience’s Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 12, 2020. Any forward-looking statements contained in this press release speak only as of the date hereof, and Twist Bioscience specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

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Twist Bioscience Investor Contact:
Argot Partners
Maeve Conneighton
212-600-1902
maeve@argotpartners.com

Twist Bioscience Media Contact:
Angela Bitting
925- 202-6211
media@twistbioscience.com

Biotia Media Contact:
Steve Capoccia
617-372-1539
spc@spcoms.com

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