Twist Bioscience Launches TCR and CAR Libraries to Enable the Development of Cell Therapies

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TCR and CAR libraries enable comprehensive screening of combinations of custom gene parts including domains from TCRs and CARs

Information about the offering available at AACR Annual Meeting 2023

SOUTH SAN FRANCISCO, Calif.--(BUSINESS WIRE)--Apr. 13, 2023-- Twist Bioscience Corporation (NASDAQ: TWST), a company enabling customers to succeed through its offering of high-quality synthetic DNA using its silicon platform, today announced the launch of Twist T-cell Receptor (TCR), and Twist chimeric antigen receptor (CAR) Libraries. These new libraries provide researchers with the ability to rapidly create custom libraries that can enable the identification and development of next generation cell therapies.

“With the dramatic increase in interest around cell and gene therapies, the addition of Twist CAR and TCR Libraries offers an important and differentiated tool to enable the development of the next generation of treatments for those suffering from a wide range of diseases,” said Emily M. Leproust, Ph.D., CEO and co-founder of Twist Bioscience. “Twist CAR and TCR Libraries allow researchers and drug developers to fine tune these receptors to address the challenges of cell therapies, including off-target toxicity, enabling rapid advancement toward the clinic.”

Twist TCR and CAR Libraries are large and diverse libraries made of up to 10,000 gene fragment combinations. This exceptional diversity enables high-throughput screening and characterization of novel and known sequence variants for therapeutic discovery. In these libraries, combinations of custom gene parts are shuffled to allow customers to test multiple elements at once, explore new combinations of variable binding regions and select candidates with the greatest therapeutic potential, accelerating the discovery phase and expediting the timeline to the clinic.

“While cell therapies have made a meaningful impact clinically, they have not yet reached their full potential,” said Colin Farlow, CEO & Cofounder of Serotiny. “We partnered with Twist to accelerate progress toward our goal of engineering the next generation of cell therapies. Twist built CAR libraries of exceptional size and complexity that Serotiny utilized to discover synthetic receptors, aiming to decrease the costs and increase the effectiveness of cell therapies targeting solid tumors.”

Twist TCR and CAR Libraries Production Workflow

Twist designs variations of customer selected DNA sequences. The sequences then go through the assembly process where custom gene parts are “shuffled.” In TCR libraries, the alpha and beta chains are shuffled to create precise user-defined alpha and beta pairs or they can be shuffled into combinatorial pairs. In CAR libraries, variants of each domain are shuffled in a process called scaffold optimization. The variants are then cloned and sequenced. Before shipping to the customer, Twist uses next-generation sequencing to verify the entire library.

Presence at the American Association for Cancer Research (AACR) Annual Meeting 2023

Information about the Twist TCR and CAR Libraries will be available at the Twist booth at the AACR Annual Meeting 2023, taking place April 14-19 in Orlando, Florida.

In addition, Twist will present the following posters at the conference:

- “Twist pan-cancer synthetic RNA fusion control for assay development”, available for viewing Sunday, April 16 1:30-5:00 PM ET
- “Human anti-CD40 agonistic antibodies with enhanced FcgR engagement activate immune cell and promote anti-tumor efficacy”, available for viewing Monday, April 17 9:00-12:30 PM ET
- “Discovery of a potent, selective, and tumor-suppressing antibody antagonist of DKK1”, available for viewing Monday, April 17 1:30-5:00 PM ET
- “High-sensitivity detection of specific ultra low-frequency somatic mutations for minimal residual disease monitoring”, available for viewing Wednesday, April 19 9:30-12:30 PM ET
- “An end-to-end workflow for improved methylation detection”, available for viewing Wednesday, April 19 9:30-12:30 PM ET

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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Legal Notice Regarding Forward-Looking Statements

This press release contains forward-looking statements. All statements other than statements of historical facts contained herein, including statements regarding the ability of the Twist TCR and CAR Libraries to enable the identification and development of next generation cell therapies and allow customers to test multiple elements at once, explore new combinations of variable binding regions and select candidates with the greatest therapeutic potential, 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. 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 relating to COVID-19; 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 that could make the products Twist Bioscience is developing obsolete or non-competitive; uncertainties of the retention of significant customers; the ability of Twist Bioscience to successfully integrate acquired companies, including Abveris, and to achieve expected benefits from acquisitions; supply chain and other disruptions caused by the COVID-19 pandemic or otherwise; 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 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 February 7, 2023 and subsequent filings with the SEC. 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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