Adaptive Biotechnologies Announces New Data Demonstrating ImmunoSEQ® Technology Can Identify T-Cell Receptors Associated with Crohn's Disease

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- Data being presented at the 17th European Crohn's and Colitis Organisation (ECCO) exhibit the use of Adaptive's ImmunoSEQ® technology to successfully identify T-cell receptors (TCR) associated with Crohn's disease using blood samples
- Findings support the importance of identifying and analyzing T-cell receptors associated with Crohn's disease, potentially opening a new path to diagnosis and providing further insights into disease subtypes

SEATTLE, Feb. 18, 2022 (GLOBE NEWSWIRE) -- Adaptive Biotechnologies Corporation (Nasdaq: ADPT), a commercial stage biotechnology company that aims to translate the genetics of the adaptive immune system into clinical products to diagnose and treat disease, presented data on T-cell receptor (TCR) sequences associated with Crohn's disease (CD) during an oral presentation today at the 17 th Congress of European Crohn's and Colitis Organisation (ECCO) being held virtually February 16-19. The study identified and characterized TCR sequences associated with CD utilizing Adaptive's immunoSEQ ® technology, providing fundamental insights into the body's response to CD at the cellular level.

The immunoSEQ assay uses sequencing technology to decipher the complexity of the adaptive immune system. This multi-national study, which was also recently published in *The Journal of Crohns and Colitis*, utilized immunoSEQ technology to analyze TCRs from blood samples of 1,738 CD cases and 4,970 healthy donors. Intestinal tissue samples from a subset of 380 cases were also analyzed. Through this analysis, 1,121 CD-associated TCRs were identified in patients' blood and verified in tissue. The identification of disease-specific TCRs is an important first step in identifying a signal and developing an algorithm to inform development of a diagnostic test for CD.

"The study identified Crohn's-specific TCRs in both the blood and tissue of patients with Crohn's disease, including a large subset that are 'public,' or shared among patients," said Matthieu Allez, MD, PhD, Professor and Head, Department of Gastroenterology, Hospital Saint-Louis, Paris. "These findings suggest that blood-based testing for this often-debilitating disease could be used to diagnose and more effectively manage the disease through the identification of these disease specific T-cell receptors."

T cells can have a significant impact on inflammation in CD, but until now, disease-associated TCRs have been largely unknown and underleveraged in diagnostics for the disease.[1] These findings show that immunoSEQ can successfully identify TCRs for CD in a blood sample, which is reflective of the TCRs in intestinal tissue. The average length of time from onset of symptoms to diagnosis for a CD patient can be 1-2 years in the US but may be much longer in other countries, so the potential to open a new path to identify the disease earlier is significant.[2,3] Furthermore, the amount of Crohn's-related TCRs can provide insights into disease characteristics such as the phenotype and location of the disease, with possible clinical implications.

In addition to TCR findings, the analysis also studied the possible association between human leukocyte antigens (HLAs) alleles and CD-associated TCRs, which live on most cells in the body, by leveraging the novel immunoSEQ HLA Classifier. HLA alleles are genetic factors that have been found to contribute to a small portion of risk for CD. In this study, nearly 400 CD-associated TCRs were found to be associated with specific HLA alleles. These TCR associations highlight the importance of studying TCRs in the context of HLA type and potentially point to new risk factors and insights for CD such as the involvement of specific antigens that the immune system may be reacting to in people living with CD.

"We're excited to see these results and their potential to advance the scientific community's understanding of the immune response to Crohn's disease. The use of immunoSEQ and characterization of TCRs in the blood have the potential to uncover new knowledge on the development and progression of the disease, with the potential to eventually improve diagnostic options and disease management for people living with Crohn's," said Harlan Robins, PhD, Chief Scientific Officer and Co-Founder of Adaptive Biotechnologies. "We look forward to continuing our research and advancing the development of our T-Detect test to include an application in the diagnosis of Crohn's disease."

CD is a subtype of inflammatory bowel disease, a group of diseases impacting about 6.8 million adults globally.[4] Early treatment with effective medications can prevent disease progression towards complications, surgery and disability. However, CD is difficult to diagnose and treat, with more than half of patients initially misdiagnosed. No single blood test currently exists for diagnosis of CD. Instead, patients often undergo a series of tests – often invasive – in order to reach a conclusive diagnosis.

Based on the results of this study, Adaptive is further investigating specific TCR signatures that are associated with CD related behavior and disease activity to further the development of T-Detect in this indication. Additional research will also focus on signal optimization and clinical validation to explore commercial utility.

About the immunoSEQ® Assay
Adaptive's immunoSEQ Assay helps researchers make discoveries in areas such as oncology, autoimmune disorders, infectious diseases and basic immunology. The immunoSEQ Assay can identify millions of T- and/or B-cell receptors from a single sample in exquisite detail. The immunoSEQ Assay is used to ask and answer translational research questions and discover new prognostic and diagnostic signals in clinical trials. The immunoSEQ Assay provides quantitative, reproducible sequencing results along with access to powerful, easy-to-use analysis tools. The immunoSEQ Assay is for research use only and is not for use in diagnostic procedures.

About T Detect™
T-Detect ™ is a highly sensitive and specific diagnostic test under development for multiple diseases, translating the natural diagnostic capability of T

cells into clinical practice. In 2018, Adaptive and Microsoft partnered to build a map of the immune system called the TCR-Antigen Map. This approach uses immunosequencing, proprietary computational modeling, and machine learning to map T-cell receptor sequences to disease-associated antigens for infectious diseases, autoimmune disorders and cancer. From a simple blood draw, T-Detect will leverage the map to provide an immunostatus for an individual, enabling early disease diagnosis, disease monitoring, and critical insights into immunity. T-Detect COVID is the first clinical test launched from this collaboration and the first commercially available T-cell test designed to detect recent or prior SARS-CoV-2 infections. T-Detect COVID is not FDA-cleared or approved, it has received an EUA from the FDA and is available for prescription use only.

About Adaptive Biotechnologies
Adaptive Biotechnologies is a commercial-stage biotechnology company focused on harnessing the inherent biology of the adaptive immune system to transform the diagnosis and treatment of disease. We believe the adaptive immune system is nature's most finely tuned diagnostic and therapeutic for most diseases, but the inability to decode it has prevented the medical community from fully leveraging its capabilities. Our proprietary immune medicine platform reveals and translates the massive genetics of the adaptive immune system with scale, precision and speed to develop products in our Immune Medicine and Minimal Residual Disease (MRD) businesses. We have three commercial products and a robust clinical pipeline to diagnose, monitor and enable the treatment of diseases such as cancer, autoimmune conditions and infectious diseases. For more information, please visit adaptivebiotech.com and follow us on www.twitter.com/adaptivebiotech.

Forward Looking Statements
This press release contains forward-looking statements that are based on management's beliefs and assumptions and on information currently available to management. All statements contained in this release other than statements of historical fact are forward-looking statements, including statements regarding our ability to develop, commercialize and achieve market acceptance of our current and planned products and services, our research and development efforts, the clinical and commercial utility of such efforts and other matters regarding our business strategies, use of capital, results of operations and financial position, and plans and objectives for future operations.

In some cases, you can identify forward-looking statements by the words "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors are described in the documents we file with the Securities and Exchange Commission from time to time under "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and other sections of those documents. We caution you that forward-looking statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. As a result, the forward-looking statements may not prove to be accurate. The forward-looking statements in this press release represent our views as of the date hereof. We undertake no obligation to update any forward-looking statements for any reason, except as required by law.

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