Preliminary Data from Real-World Study Demonstrate T-cell Testing Outperforms Antibody Testing in Identifying Past SARS-CoV-2 Infections

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– Findings support upcoming launch of T-Detect ™COVID, first T-cell test for novel coronavirus
– Data support mounting evidence that measuring T-cells is necessary to fully characterize immune responses to SARS-CoV-2 across the population
– Additional supporting data to be published soon

SEATTLE, Nov. 13, 2020 (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, today announced that its T-Detect™ Assay for past SARS-CoV-2 infection in development identified 97% (68/70) of past PCR-confirmed SARS-CoV-2 infections compared to 77% (54/70) with commercial EUA approved antibody testing at similar specificity approximately two months after PCR diagnosis. Additionally, the T-cell response was greater in symptomatic versus asymptomatic subjects, whereas there was no correlation between antibody levels and disease severity in recovered patients. Preliminary results of this study, performed in collaboration with University of Padua and Ospedale San Raffaele in Milan, who were funded by a grant from Umberto Veronesi Foundation were made available on medRxiv. T-Detect™ COVID will be launched later this fall, becoming the first clinical T-cell based diagnostic test able to confirm past infections to SARS-CoV-2.

It is likely that some people may never develop antibodies to SARS-CoV-2 because they can resolve the infection early and effectively with T cells. Recent studies have demonstrated that antibodies appear to wane over time[1], while virus-specific T cells have been shown to persist for at least six months[2]. This new study adds to mounting evidence that T cells, along with antibodies, may serve as an important correlate of immune protection and can help provide a more complete picture of the duration of immunity to the virus following an infection or administration of a vaccine.

“These data add to the growing body of real-world evidence that the T cell plays a critical role in immunity to SARS-CoV-2,” said Lance Baldo, Chief Medical Officer of Adaptive Biotechnologies. “T cells are emerging as another key indicator for past infection and immunity to the novel coronavirus, and a T-cell test for patients that is accurate and reproducible can serve large populations of people given what we are learning about the biology of the immune response.”

An initial study published in Nature in June 2020 was conducted by the University of Padua in which nearly the entire population of Vo’, Italy (2,900 of the town’s 3,275 residents), was tested using PCR for SARS-CoV-2 infection at the beginning and end of a 14-day lockdown of the town, followed by longer-term clinical monitoring. At that time, 81 people in the town tested positive for the virus in at least one of the two surveys. Interestingly, more than 40% of those who tested positive were asymptomatic, guiding the town’s response to the then-emerging pandemic and driving their success in containment[3].

In a follow-up study of 2,290 residents, including 70 of the 81 who tested positive by PCR, antibody testing with a EUA approved commercial test (IgG) and T-cell testing with Adaptive’s T-Detect Assay for past SARS-CoV-2 infection were performed approximately 60 days after PCR testing. The T-cell assay identified 97% (68/70) of past PCR-confirmed SARS-CoV-2 infections compared to 77% (54/70) with the antibody test. Notably, 24 of the 70 PCR -positive patients were asymptomatic, highlighting the added sensitivity of T-cell based testing to provide a more accurate representation of past infection in a community. The T-cell response was measured by the overall quantity of T cells as well as the number of unique virus-specific T cells. Convalescent subjects who were symptomatic and hospitalized with COVID-19 had significantly greater T-cell response than asymptomatic subjects, while antibody levels did not correlate with disease severity.

Notably, an additional 45 (2.0%) of PCR-negative participants tested positive with the T-Detect Assay for past SARS-CoV-2 infection. About half of these individuals had reported symptoms before or after PCR testing or a household exposure, indicating the T-cell assay may also identify past infections that had been missed by prior PCR testing.

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 will be the first clinical test launched from this collaboration and the first commercially available T cell test designed to detect past SARS-CoV-2 infections. It is expected to launch this fall.

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 life sciences research, clinical diagnostics and drug discovery. We have two commercial products and a robust clinical pipeline to diagnose, monitor and enable the treatment of diseases such as cancer, autoimmune conditions and infectious diseases. Our goal is to develop and commercialize immune-driven clinical products tailored to each individual patient. 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.

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, including statements regarding T-Detect™ and its launch, potential commercial acceptance, or clinical utility, either with respect to COVID-19 or other disease states. These risks, uncertainties and other factors are described under "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in the documents we file with the Securities and Exchange Commission from time to time, including a Quarterly Report on Form 10-Q to be filed later today. 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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[1] Ward, et al.medRxiV preprint, 2020
[2] Zuo, et al. bioRxiV preprint, 2020
[3] Lavezzo, et al. Nature, 2020

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Source: Adaptive Biotechnologies