



Adaptive Biotechnologies Publishes Ground-Breaking Proof-of-Principle Experiment in Nature Genetics

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Seattle, WA – April 3, 2017 – Adaptive Biotechnologies, the leader in combining next-generation sequencing and expert bioinformatics to profile T-cell and B-cell receptors (TCRs and BCRs) of the adaptive immune system, today announced that it has published findings from a novel proof-of-principle experiment in *Nature Genetics*.

The article, "Immunosequencing Reveals Signatures of Pathogen Exposure History and of HLA-Mediated Sharing of the T-Cell Repertoire" describes how Adaptive's computational biologists used the company's immunoSEQ[®] Platform and data sets to determine if T-cell receptor (TCR) repertoire profiling by immunosequencing can be used to diagnose the exposure status of cytomegalovirus (CMV) infection in humans.

"We believe that our approach of reading T-cell memory to infer pathogen exposure history has exciting and potentially far-reaching potential," said Harlan Robins, PhD, Adaptive Biotechnologies co-founder and head of innovation. "It's another important step in validating immunosequencing as a highly sensitive, highly specific and cost-effective diagnostic for use in a wide variety of chronic viral infections."

The Adaptive study was funded in part by the Fred Hutchinson Cancer Research Center. The study co-authors selected CMV for their proof-of-principle experiment, since the disease is a chronic viral infection present in approximately 30% – 90% of adults (depending on the population observed), and has been studied extensively as a model system for public T-cell responses. Using public data, the Adaptive team profiled the TCR repertoire of a core cohort of 666 subjects, and an independent validation cohort of 120 subjects. The team developed a statistical framework to classify subjects by CMV status, and then confirmed with high accuracy that immunosequencing can be used to diagnose CMV status. Further, the team used this approach to demonstrate that it also performs well at predicting subjects' human leukocyte antigen (HLA) alleles, an indication that this methodology could be used to identify signatures of exposure to other pathogens, and even to vaccination. To read the article in its entirety, click [here](#).

About Adaptive Biotechnologies

Adaptive Biotechnologies is the pioneer and leader in combining high-throughput sequencing and expert bioinformatics to profile T-cell and B-cell receptors. Adaptive is bringing the accuracy and sensitivity of its immunosequencing platform into laboratories around the world to drive groundbreaking research in cancer and other immune-mediated diseases. Adaptive also translates immunosequencing discoveries into clinical diagnostics and therapeutic development to improve patient care. For more information, please visit adaptivebiotech.com.

About the immunoSEQ Platform

Adaptive's immunoSEQ Platform helps researchers make discoveries in areas such as oncology, autoimmune disorders, infectious diseases and basic immunology. The immunoSEQ Assays can identify millions of T- and B-cell receptors from a single sample in exquisite detail. Offered as a Service or Kit, immunoSEQ Assays provide quantitative, reproducible sequencing results along with access to powerful, easy-to-use analysis tools. The immunoSEQ Assays are for research use only and are not for use in diagnostic procedures.

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