

# MIODx with DNAnexus launches ClonoMap™ Immune Profiler: a novel approach to advance biomarker and therapeutic discovery

SAN JOSE, CA, UNITED STATES, December 7, 2020 /EINPresswire.com/ -- MIODx Inc., an immune profiling solutions company, announced today it has adopted the DNAnexus Titan Platform to launch [ClonoMap™ Immune Profiler](#), an interactive T-cell receptor (TCR) repertoire analyses, and biomarker discovery pipeline. The ClonoMap™ solution enables researchers to perform automated and interactive TCR repertoire analyses, incorporate datasets from multiple studies, and seamlessly collaborate across institutions or departments.

Detecting changes to the TCR repertoire is a well-accepted and rapidly developing strategy to discover biomarkers of disease progression or response to a vaccine or immunotherapy. A healthy individual's immune system consists of a vast repertoire of T- cells (in the order of  $10^{10}$  cells), and each individual T-cell has a unique TCR. This diverse repertoire of T-cells recognizes peptides originating from foreign elements like invading pathogens or cancer cells. Upon activation, a specific T-cell undergoes clonal expansion; sequencing of the TCR repertoire in bulk sheds light on changes in the repertoire diversity and frequency of unique TCR clones.

DNAnexus Titan is an ideal platform to run the ClonoMap™ TCR repertoire analysis pipeline. To systematically track changes in the TCR repertoire and utilize it as a biomarker, researchers must analyze TCR repertoire profiles of several (to many) large cohorts. ClonoMap™ on DNAnexus Titan handles these complex datasets with ease, allowing researchers the flexibility to store, share, and integrate metadata required to generate and test hypotheses; all with the aim to gain insights into the relevance of TCR repertoires as biomarkers.

MIODx is also developing new AI and machine learning applications to integrate with ClonoMap™ TCR repertoire outputs, to help accelerate TCR therapeutic research. This suite of tools will extend beyond immune profiling, leveraging DNAnexus to incorporate other types of data, including patient records and multi-omics.

"Our focus is modeling a healthy TCR repertoire signature, from which we will measure the biological heterogeneity of individual responses to environmental insults. With a baseline TCR signature in place, we intend to predict how an individual will benefit from a specific treatment or therapy," said Graeme McLean, CEO at MIODx.

"As we continue to add applications to our ClonoMap™ pipeline, it became clear we require the

scalability, ease of use and security built into the DNAnexus architecture. This partnership allows us to confidently provide MIODx TCR biomarker expertise to the research community.”

#### About MIODx

MIODx was founded with the mission to improve medical outcomes via advanced diagnostics. The company has established immunosequencing workflows including automated, interactive analyses to aid biomarker discovery.

Graeme McLean  
MIODx, Inc.  
+1 650-353-1946  
gmclean@miodx.com

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