Conclusions:

- The hCTCell TCR Diversity panel from NoNulolin provides wide coverage of T cell variable gene usage in healthy human PBMCs.
- Among the 2 donors analyzed, exposure to IO102 or IO103 in short-term cultures resulted in discrete changes to the TCR repertoire, as per assessment of variable gene usage and TCR diversity.
- Using control cultures, we are able to identify TCR regions that are responsive to either IO102 or IO103 peptides in a donor-specific manner.
- Relatedness of TRAV and TRBV regions between peptides and donors can be assessed at a phylogenetic level.
- Top TRBV regions, including TRBV11-3, TRBV15, TRBV16, and TRBV18, were expanded following restimulation with IO102 or IO103 peptides.
- Correlation analysis of the TRAV and TRBV usage revealed potential TRC-RA relationships.
- Exposure to antigen shifts T cell phenotypes slightly towards a memory phenotype.
- Future studies: We are further working on validation of TCR gene usage among IO102 or IO103 responsive T cells using enriched cultures, qPCR primer probes specific for variable regions, and antibodies targeting specific TRAV and TRBV regions.

References: