

29th International Congress on

Prevention of Diabetes and Complications

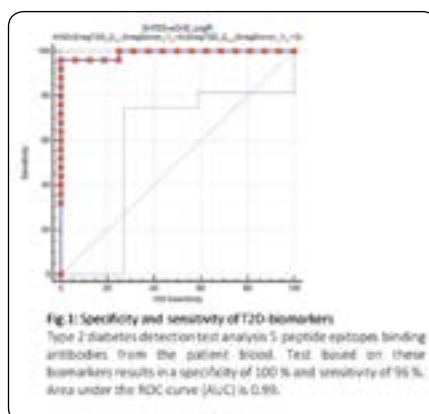
September 27-28, 2018 | Berlin, Germany

Immunoprofiling: Early changes in the immunoprofile predict the development of Type 2 Diabetes

Neuman Toomas

IPDx Immuno profiling Diagnostics GmbH, Germany

Type 2 Diabetes (T2D) is related to numerous complications in metabolic, inflammatory and vascular systems as well as significant changes in the immune response including changes in antibody profiles. Numerous papers show that development of T2D is related to changes in the immune system. Using novel patented antibody profiling technology, Mimotope Variation Analysis (MVA), enabling to analyze up to 109 antibodies in one blood sample, we have demonstrated the presence of D specific antibody profiles by comparing healthy (control), high risk (obese), prediabetes (glycose and glycosylated hemoglobin) and diagnosed T2D individuals. Study results demonstrate that T2D patients have been shown to have changes in the gut microbiome, virome and immunome. Immunoprofiling using MVA clearly shows changes in antibody profiles in the course of development from high risk group to diagnosed T2D. These changes reflect immune responses to changes in virome, microbiome and different autoantigens. Using specific antibody patterns we have identified serological biomarkers, characteristic for T2D, and developed diagnostic tools to screen high risk group individuals. Developed prognostic test enables to identify high risk group individuals who will develop preT2D and T2D. Our test is based on the analysis of autoantibodies binding to specific peptide epitopes Test validation studies resulted in high specificity and sensitivity (see Fig1).



Recent Publications

1. US Patent US9672324B1. Peptide profiling and monitoring humoral immunity.
2. Sadam H, et al. Prostaglandin D2 Receptor DP1 Antibodies Predict Vaccine-induced and Spontaneous Narcolepsy Type 1: Large-scale Study of Antibody Profiling. EBioMedicine. 2018 Mar;29:47-59.

Biography

Toomas Neuman, Ph.D., has 40 years research experience in academia and industry. He is an expert in immunology and molecular and cell biology and founder of several biotechnology companies in US, Estonia and Germany. He published more than 80 research papers and presented at hundreds of scientific forums in more than 15 countries and is inventor of 8 patents and 7 patent applications.

toomas.neuman@ipdx.eu