

## **Dr. Wilco de Jager**

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### **Abstract**

#### **“Biomarker assay development; applications for immunopathology and clinical intervention”**

The importance of cytokines in the pathogenesis of inflammatory diseases is highlighted by the success of therapeutic approaches directed against cytokines and cytokine receptors. Cytokines are characterized by their redundancy and pleiotropy: multiple cytokines can target the same receptor, while on the other hand a single cytokine can have multiple, even contradictory immunological effects. Therefore measurement of single cytokines has very limited diagnostic value. We showed recently however, that cytokine profiles that include multiple cytokines in plasma reveal different clustering of cytokines between different patient groups. Linking a cytokine/protein biomarker signature with clinical outcome may help to identify and classify patient cohorts in order to correlate individual cytokine profiles with clinical outcome and response to therapy. Thus “intelligent” cytokine signatures can be used as biomarkers human inflammatory diseases. There are however various risks associated with this approach. First of all, it is often impossible to obtain material from the site of inflammation. Secondly various often not well-known technical aspects are crucial to obtain reliable and usable results. We optimized protocols for various biological fluids, and, as our research has progressed the last 10 years we now moved over to the FlexMap 3D system, to increase the amount of markers and data output.

### **Biography**

Dr de Jager is head of biomarker core facility at the Centre for Cellular and Molecular Intervention of the University Medical Centre Utrecht, in the Netherlands. He received his PhD in immunology from the faculty of Medicine of the University of Utrecht in 2008. During his PhD he studied the interaction of cytokines in childhood arthritis, and founded, together with prof Dr Berent Prakken and Dr Ger Rijkers the biomarker core facility. This facility served as core facility for the Immune Tolerance Network, a NIH sponsored trial network focused on diabetes and transplantation immunology. Now the core facility is embedded in both translational research but also in the day to day clinics of the University Medical Centre Utrecht.