

Project title: Novel protein biomarkers for neurodegenerative diseases such as Multiple Sclerosis and Alzheimer's disease

Introduction:

Biomarkers are indicators of normal and pathogenic processes, or responses to a therapeutic treatment. For central nervous system disorders, the main biomarker discovery source is cerebrospinal fluid (CSF) since it directly interacts with the brain tissue and therefore, provides a unique window into ongoing pathology. Current biomarkers for Alzheimer's disease (AD) or Multiple Sclerosis have limited prognostic value. Therefore novel biomarkers are needed for early diagnosis and prognosis of AD.

Several projects are ongoing to identify and validate novel biomarkers for e.g. early diagnosis, for treatment response, for prognosis of AD and MS. We develop and validate multiparater assays, sometimes starting from antibody production and evaluation. We also evaluated the relation with pathology and disease mechanisms and at the end the relation with clinical outcomes in large, extensively characterised cohorts that are available in the MS center Amsterdam and Alzheimer Center Vumc.

Possible techniques (depending on the actual research project):

1. Gel Electroforesis and Western Blotting
2. ELISA
3. Luminex xMAP technology
4. Meso Scale Discovery (MSD) multi-array technology
5. immunohistochemistry

Because the exact research projects can change over time, a more specific description can be given upon request or in an interview.