

## MS05-01 | PROTEIN CONFORMATIONAL AND OLIGOMERIC REARRANGEMENTS CONTROL INTERCELLULAR SIGNALING

Janssen, Bert (Utrecht University, Utrecht)

Intercellular communication, orchestrated by cell-surface expressed proteins, is a fundamental process in the formation, function and pathology of all tissues and organs. Protein structure, interaction and conformational change determine signaling and adhesion events. Using three target systems with central roles in the formation and maintenance of our nervous system; transmembrane receptors Myelin associated glycoprotein (MAG), Sortilin and Teneurin, we show how interactions and conformational changes on the cell surface and between cells underlie the molecular mechanisms of signal transduction and adhesion. Protein conformational flexibility, important for function, imposes challenges on the structural studies. Strategies will be shown on how to handle such samples and how to overcome problems. Ultimately, we used a hybrid approach of structural biology techniques to resolve protein structures and conformational rearrangements, biophysical methods to determine protein interactions and cellular assays to unify the mechanistic insights with function in the nervous system.