Abstract of Presentation

Note: This paper should be typed in "Times New Roman" of 12pt.

<u>Presentation Title(Should be no more than 20 words):</u>

Phenotyping cells without antibodies: mass-spectrometric identification and relative quantification of N-linked cell surface glycoproteins

<u>Abstract :</u>

The classification of cell types has relied on the identification of cell surface proteins as differentiation markers. Currently, flow cytometry allows for the detection of up to a dozen differentiation markers in a single measurement. We have developed the cell surface capturing (CSC) technology for the multiplexed mass-spectrometric identification of several hundred N-glycosites specifically from cell surface exposed glycoproteins, which can be used to phenotype cells without antibodies in an unbiased fashion and without *a priori* knowledge. We show that the CSC technology allows for the detection and relative quantitative comparison of the cell surface N-glycoproteome of T and B cells, as well as for the monitoring of emerging and declining ES cell surface N-glycoprotein markers during their controlled differentiation towards the neural lineage. CSC technology enables a snapshot view of the cell surface N-glycoprotein landscape and can detect panels of N-glycoproteins as potential differentiation markers that are currently not accessible by other means.

Keywords: Proteomics, Biomarker, Therapeutic Targets, Predictive Medicine