Open Ph.D position
„Single cell proteomics of stem cells"

A Ph.D. position is available at the Research Institute of Molecular Pathology (IMP) in Vienna starting as soon as possible.

Proteome heterogeneity is largely unexplored because of the limitations of existing methods for quantifying protein levels in single cells.

Two major hurdles were:
+ Delivering the proteome of single cell to mass spec with minimal losses
+ Simultaneously identifying and quantifying peptides from single cell samples

The projects involve the development of state-of-the-art single cell proteomic tools with a particular focus on data acquisition and quantification, followed by an elaboration of a number of statistical and computational approaches developed to date for dissecting the high-dimensional single cell data. The developed methodology will be highly relevant to tackle key biological questions including how proteome heterogeneity impacts cell fate decisions of stem cells at a single cell level (in collaboration with and under co-supervision of the Mendjan lab, IMBA).

Mass spectrometry (MS) has emerged as a core analytical technique in protein chemistry. Driven by the rapid development of instrumentation, analysis methods and computing tools, MS based proteomics is at the forefront of techniques in modern life science research. Since the application of MS to stem cell biology and technology is still in its infancy, we expect that the combination of these two approaches will lead to new fundamental breakthroughs.

In the Protein Chemistry Facility, we are interested in developing new methods to increase sensitivity, accuracy and precision of protein identification/quantification and the detection of post translational modifications, respectively. Our aim is to use these optimized methods to answer fundamental biological questions in a collaborative setting. Our lab is well equipped with the latest generation of a high-resolution mass spectrometer.

The IMP and IMBA are part of the Vienna Biocenter and the successful candidate will be integrated in the Vienna Biocenter PhD Programme (*www.vbcphd.at*), and be part of a dynamic group of students. Our campus and training programs provide a stimulating environment for learning and practicing modern mass spectrometry.

Candidates with a strong background in protein chemistry and mass spectrometry will be preferred. Applications with a full CV and the names of two referees should be addressed to:

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Recent publications:
Trentini et al. Nature 2016, Nov 3 (former PhD Student);
Kiermaier et al. Science 2016, Jan 8;
Rampler et al. Journal of Proteome Research, 2015, Dec 4;
Roitinger et al: Mol Cell Proteomics, 2015 Mar 14;