Dr. Oliver Schilling

INSTITUT FÜR MOLEKULARE MEDIZIN UND ZELLFORSCHUNG
STEFAN-MEIER-STR. 17 · D-79104 FREIBURG I. BR.

ALBERT-LUDWIGS-
UNIVERSITÄT FREIBURG

INSTITUT FÜR MOLEKULARE MEDIZIN
UND ZELLFORSCHUNG
DIREKTOR: Prof. Dr. Christoph. Peters

Ihre Zeichen / Ihre Nachricht von | Unsere Zeichen / Unsere Nachricht von | Datum

Juli 11, 2008

The Institute of Molecular Medicine and Cell Research invites diploma candidates to perform their **diploma research project** or a **laboratory placement** to work on

Substrate Profiling of Extracellular Proteases.

Proteolysis is an irreversible post-translational modification. With over 550 annotated proteases in man, the abundance of proteolytic enzymes illustrates the widespread functions of proteolysis in physiology and pathology. The native substrates of almost all proteases are unknown. A set of new technologies now enables elucidation of protease substrate spectra *in vivo*. The group of Oliver Schilling has established these techniques at the IMMZ and now seeks motivated students to examine proteolytic processes in the cellular context.

These projects employ a diverse array of complementary techniques, including

- Cell culture
- Protein chemistry (SDS-PAGE, Western-Blot)
- Gel-free, quantitative proteomics (isotopic labeling, HPLC, liquid-chromatography/tandem mass spectrometry)
- Functional proteomics together with peptide chemistry (isolation of amino-terminal peptides, peptide modification)
- Bioinformatics (proteomic data analysis)

Previous knowledge is not a prerequisite - we will happily teach any of these techniques.

For further information please contact:

Dr. Oliver Schilling
Institut für Molekulare Medizin und Zellforschung
Stefan-Meier Strasse 17, Raum 02 027 (2nd floor)
79104 Freiburg
Tel: 0761 203-9615
email: oliver.schilling@mol-med.uni-freiburg.de

Publications:

Schilling, O. & Overall, C. M.
Proteome-derived, database-searchable peptide libraries for identifying protease cleavage sites.
Nature Biotechnology 26:6, 685-94 (2008)

Schilling, O. & Overall, C. M.
Proteomic discovery of protease substrates.
Current Opinion in Chemical Biology 11, 36-45 (2007)