

14th GERMAN PEPTIDE SYMPOSIUM Program

Monday, 18 March 2019

12:00 – 14:00 Registration

14:00 – 14:15 **Opening**

Ines Neundorf, Symposium Chair, University of Cologne

Welcome Address

Günter Schwarz, Dean of Faculty of Mathematics and Natural Sciences, University of Cologne

Session 1: Peptide Discovery and Protein-Protein Interactions

Chairs: L. Moroder / M. Teixidó

14:15 – 15:00 **New tools for studying epigenetic protein-peptide interactions**

Marcey L. Waters, UNC Chapel Hill, USA

15:00 – 15:20 **Investigating acetyl-lysine binding modules with peptide-based probes**

Dirk Schwarzer, University of Tübingen, Germany

15:20 – 15:40 **E-64c-Hydrazide-based cathepsin C inhibitors**

Norbert Schaschke, HS Aalen, Germany

15:40 – 16:00 **Lessons learned from disrupting protein-protein interactions of protein-phosphatase-1 with peptides**

Maja Köhn, University of Freiburg, Germany

16:00 – 16:30 Coffee Break

Session 2: Peptides in Biomedical application

Chairs: L. Moroder / M. Teixidó

16:30 – 17:15 **Intrinsic cell-penetrating activity propels Omomyc from proof of concept to viable anti-Myc therapy**

Marie-Eve Beaulieu, Peptomyc S.L., Barcelona, Spain

17:15 – 17:35 **Bacterial life based on fluorinated amino acids**

Beate Kokschn, FU Berlin, Germany

Selected short poster talks (5 minutes each)

17:35 – 17:40 **Optimization of a receptor mimetic peptide**

Karen Fiebig, University of Erlangen, Germany

17:40 – 17:45 **Head-to-tail cyclization of a cell-penetrating peptide through DKP scaffolds for cargo delivery: investigation of structural and biological properties**

Lucia Feni, University of Cologne, Germany

17:45 – 17:50 **Adaptation towards fluorinated proteomes**

Christin Treiber, FU Berlin, Germany

- 17:50 – 17:55 **Albicidin – Optimization and structure-activity relationship studies of a highly potent class of antibiotics**
Iraj Behroz, TU Berlin, Germany
- 17:55 – 18:00 **Method development for the isolation and characterization of peptoids from one-bead-one-compound libraries for the inhibition of interleukin-8**
Julia Wack, TU Darmstadt, Germany
- 18:00 – 18:05 **Probing membrane fusion with artificial SNARE analogues**
Pirajeev Selvachandran, University of Göttingen, Germany
- 18:05 – 18:10 **Functionalized coiled-coil peptide hydrogels as extracellular matrix mimics**
Katharina Hellmund, FU Berlin, Germany
- 18:10 – 18:15 **His/Tyr-based peptide motifs to study regulatory heme binding**
Benjamin Syllwasschy, University of Bonn, Germany
- 18:15 – 18:20 **N-terminal derived peptides of vaspin as cell penetrating peptides**
Catherine Tindall, University of Leipzig, Germany
- 18:20 – 18:25 **Peptides developed as kinase-specific substrates for antibody-free multicolor TR-FRET-based screening of kinase inhibitors in high throughput**
J. L. Heier, Minneapolis, USA
- 18:30 – 20:00 **Poster Session I** with Lite Bites and Beer
Presentation of even poster numbers

Tuesday, 19 March 2019

Session 3: Protein-Protein Interactions / Peptide Discovery and Bioconjugation

Chairs: A. Geyer / R. Brock

- 9:00 – 9:45 **Targeting protein-protein interactions of receptor complexes**
Kristian Strømgaard, University of Copenhagen, Denmark
- 9:45 – 10:05 **Peptides with (non-)covalent constraints to target protein-protein interactions**
Chiara Cabrele, University of Salzburg, Austria
- 10:05 – 10:25 **Formylglycine-containing peptides enable the discovery of phosphotyrosinemimetic fragments for the validation of proteins as cancer targets**
Jörg Rademann, FU Berlin, Germany
- 10:25 – 10:45 **Chemoselective Pd-catalyzed modification of cysteine-containing peptides and proteins**
Julia Kriegesmann, University of Vienna, Austria
- 10:45 – 11:15 Coffee Break
- 11:15 – 11:35 **Toward homogeneous glycoproteins via auxiliary-assisted sequential glycosylation and ligation of peptides**
Claudia Bello, University of Vienna, Austria
- 11:35 – 11:55 **The effect of non-enzymatic modifications within the N- and C-terminal domain of the small heat shock protein Hsp27**
Christian F. W. Becker, University of Vienna, Austria
- 11:55 – 12:15 **Nanofiber-forming peptides as novel gelators in cell-supporting, injectable hydrogels**
Christoph Synatschke, MPI Polymer Research, Germany
- 12:15 – 12:35 **Heme-protein interactions from a peptide chemist's view: From motivation to models, motifs, and assessment**
Diana Imhof, University of Bonn, Germany
- 12:35 – 12:55 **Microwave synthesis of peptides, peptide mimetics and new synthesis applications**
Monika Swiontek, CEM GmbH, Germany
- 13:00 – 14:30 Lunch

Session 4: Peptide Discovery and Biomedical Application of Peptides

Chairs: I. Huc / H. Mootz

- 14:30 – 15:15 **Towards the development of orally available cyclic peptides**
Christian Heinis, EPFL, Switzerland
- 15:15 – 15:35 **Multicomponent strategies to side chain- and Backbone-modified cyclic peptides**
Manuel G. Ricardo, IPB Halle, Germany
- 15:35 – 15:55 **Bicyclic RGD-peptides with exquisite selectivity for the integrin $\alpha\beta3$ and $\alpha5\beta1$ receptors using a ‘Random Design’ approach**
D. Michel, Pepscan Therapeutics, The Netherlands
- 15:55 – 16:15 **In situ cyclization of proteins (INCYPRO): enzymes with stable tertiary structure**
Tom N. Grossmann, VU University Amsterdam, The Netherlands
- 16:15 – 16:45 Coffee Break
- 16:45 – 17:05 **Modulation of Y1-receptor responses by chemically modified truncated NPY analogs**
Kathrin Bellmann-Sickert, University of Leipzig, Germany
- 17:05 – 17:25 **Octreotide conjugates for tumor targeting and imaging**
Eduard Figueras Agostí, University of Bielefeld, Germany
- 17:25 – 17:45 **/soDGR integrin ligands: a tool for targeted drug delivery**
Silvia Gazzola, Università dell’ Insubria Como, Italy
- 17:45 – 18:05 **Molecular Epitope Determination of Aptamer Complexes of the Multi-domain Protein C-Met by Proteolytic Affinity- Mass Spectrometry**
Michael Przybylski, Steinbeis Centre for Biopl Rüsselsheim, Germany
- 18:10 – 19:40 **Poster Session II** with Lite Bites and Beer
Presentation of odd poster numbers

Wednesday, 20 March 2019

Session 5: Peptide Structure and Function

Chairs: K. Strømgaard / B. Koksch

- 9:00 – 9:45 **Foldamer-based protein mimicry and recognition**
Ivan Huc, LMU München, Germany
- 9:45 – 10:05 **Side chain orientation of tryptophan analogs determines agonism and inverse agonism in short ghrelin peptides**
Sylvia Els-Heindl, University of Leipzig, Germany
- 10:05 – 10:25 **Stereoselective peptide modifications – efficient tools for natural product and drug synthesis**
Uli Kazmeier, Saarland University, Germany
- 10:25 – 10:45 **Regioselective dimerization of a tetra-cysteine peptide and its use as a dimerization domain for proteins**
Armin Geyer, Marburg University, Germany
- 10:45 – 11:15 Coffee Break

Session 6: Biomedical Application of Cell-Permeable Peptides

Chairs: K. Strømgaard / B. Koksch

- 11:15 – 12:00 **Activatable cell penetrating peptides: click to enter**
Dennis Löwik, Radboud University Nijmegen, The Netherlands
- 12:00 – 12:20 **Cell-penetrating peptides as penetration enhancers of proteins and nanoparticles in 3D tumor models**
Roland Brock, Radboud University, The Netherlands
- 12:20 – 12:40 **Cell penetrating peptides: euphoric hope, various applications, till now two dozen clinical trials**
Siegmund Reissmann, Friedrich-Schiller University of Jena, Germany
- 12:40 – 13:10 **Blood-brain barrier shuttle peptides, from discovery to applications**
Meritxell Teixidó, IRB Barcelona, Spain
- 13:10 – 14:40 Lunch

Session 7: Protein / Peptide Discovery and Novel Analytical tools
Chairs: F. Thomas / D. Schwarzer

- 14:40 – 15:25 **Kinetics of protein aggregation**
Tuomas Knowles, University of Cambridge, UK
- 15:25 – 15:45 **Inhibition of amyloid self-assembly of insulin by designed peptides mimicking IAPP cross-amyloid interaction surfaces**
Aphrodite Kapurniotu, TU München, Germany
- 15:45 – 16:05 **Revealing the role of 33-mer gliadin oligomers in gluten related disorders**
Veronica I. Doderer, University of Bielefeld, Germany
- 16:05 – 16:35 Coffee Break
- 16:35 – 17:05 **Expanding the genetic code – protein chemistry in living systems**
Kathrin Lang, TU München, Germany
- 17:05 – 17:25 **From peptide to protein chemistry: expanding the genetic code with a lysine derivate bearing the enzymatically removable phenylacetyl group**
Henning D. Mootz, University of Münster, Germany
- 17:25 – 17:45 **A traceless catch-and-release method for rapid peptide purification and modification**
Robert Zitterbart, Belyntic GmbH Berlin, Germany
- 19:30 **Conference Dinner**
Ludwig im Museum
Heinrich-Böll-Platz, 50667 Köln

Thursday, 21 March 2019

Session 8: Peptide Biomaterials and Structured Peptides

Chairs: J. Eichler / V. Dodero

- 9:00 – 9:45 **Engineering peptide self-assembly for biomaterial applications through molecular and environmental manipulation**
Helena S. Azevedo, University of London, UK
- 9:45 – 10:05 **Using DNA-based nanotemplating to enhance biological function of peptides**
Dave M. Smith, Fraunhofer IZI Leipzig, Germany
- 10:05 – 10:25 **Peptide engineering with carboranes**
Matthias Scholz, University of Bonn, Germany
- 10:25 – 10:45 **Chemical synthesis of functional peptides and membrane-associated proteins: from drug discovery to bioinspired materials**
Alesia A. Tietze, University of Gothenburg, Sweden
- 10:45 – 11:15 Coffee Break
- 11:15 – 11:45 **Exploring de novo designed protein folding motifs as scaffolds for chemical reactions**
Franziska Thomas, University of Göttingen, Germany
- 11:45 – 12:05 **Gaining and losing the activity of antimicrobial [KL]_n peptides**
Fabian Schweigardt, KIT Karlsruhe, Germany
- 12:05 – 12:25 **Detailed structure of stable toroidal pores formed by an antimicrobial peptide in membranes, determined by multinuclear solid-state NMR**
Erik Strandberg, KIT Karlsruhe, Germany
- 12:25 – 12:45 **Modification of vancomycin leads to conjugates that overcome all types of resistance**
Walter Mier, Heidelberg University Hospital, Germany
- 12:45 – 13:00 Concluding Remarks / End of Conference