



UniCat Minisymposium:

Biocatalysts – towards Biofuels, Fine Chemicals and Pharmaceuticals

Monday 23rd July

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9:45	Chair: Peter Leadlay		
9:45-10:00	Opening words	Lars Lauterbach/ Jennifer Jaitzig	Villa Bell, Marchstr. 6, BEL 301
10:00-10:30	Metagenomic mining of microviridin-like peptides from field samples and in vitro reconstitution of microviridin biosynthetic pathway	Douglas Gatte Picchi, AK Elke Dittmann, Uni Potsdam	BEL 301
10:30-11:00	<i>In vivo</i> congenerated type II two-component Lantibiotic from <i>B. licheniformis</i>	Anja Kuthing, AK Roderich Süßmuth, TU Berlin	BEL 301
11:00-11:30	Thermostable nucleoside phosphorylases for the synthesis of purine nucleoside analogues	Kathleen Szeker, AK Peter Neubauer, TU Berlin	BEL 301
11:30-12:00	Insights into the oxygen tolerance of the soluble, NAD ⁺ -reducing [NiFe] hydrogenase from <i>Ralstonia eutropha</i> : from structure to function	Marius Horch, AK Ingo Zebger/ Peter Hildebrandt, TU Berlin	BEL 301
12:00-13:00	<i>Lunch</i>		Mensa
13:00	Chair: Bettina Nestl		BEL 301
13:00-13:30	Functionally relevant electron transfers in biomimetic hydrogenase models: a theoretical perspective	Claudio Greco, HU Berlin	BEL 301
13:30-14:00	Conversion of cellulose biomass into fuels & chemicals using heterogeneous & electrochemical catalysis	K. Rao Vuyyuru, AK Peter Strasser, TU Berlin	BEL 301
14:00- 14:30	<i>Coffee & Tea</i>		BEL 301
14:30-15:00	Exploration of anaerobic bacteria of the genus <i>Dehalococcoides</i> for the degradation of highly toxic dioxins and characterization of their metalloenzymes	Christian Schipp, AK Peter Neubauer, TU Berlin	
15:00-15:30	tba	Katja Stehfest, AK Hegemann, HU Berlin	BEL 301
15:30-16:00	Functional evaluation of candidate ice-structuring proteins using cell-free expression	Andreas Brödel, AK Stefan Kubick, Fraunhofer IBMT Potsdam	BEL 301
16:00- 17:00	<i>Break</i>		C 264
17:00- 18:30	UniCat Lecture: Chemistry-based enzyme engineering in biocatalysis	Bettina Nestl, Institute of Technical Biochemistry, University of Stuttgart	Institute of Chemistry Straße des 17. Juni 115, C 264



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9:15			
9:15- 10:15	UniCat Lecture: Multiple catalytic promiscuity: towards rules and tools	Florian Hollfelder, Department of Biochemistry, University of Cambridge, UK	Institute of Chemistry Straße des 17. Juni 115, C 264
10:15-10:45	<i>Coffee & Tea</i>		BEL 301
10:45	Chair: Florian Hollfelder		
10:45-11:15	<i>In vitro</i> chemoenzymatic and <i>in vivo</i> biocatalytic synthesis of new beauvericin analogues	Lennart Richter, AK Roderich Süßmuth, TU Berlin	Villa Bell, Marchstr. 6, BEL 301
11:15-11:45	Insights into skyllyamycin biosynthesis, a cyclodepsipeptide containing unusual amino acid side chain modifications	Stefanie Uhlmann, AK Roderich Süßmuth, TU Berlin	BEL 301
11:45-12:15	Oxygen tolerance of the membrane- bound hydrogenase from <i>R. eutropha</i> and its benefit for biotechnological application	Stefan Frielingsdorf, AK Oliver Lenz/ Bärbel Friedrich, HU Berlin	BEL 301
12:15-13:15	<i>Lunch</i>		Mensa
13:15	Chair: Kylie Vincent		BEL 301
13:15-13:45	Spectroelectrochemical approach towards optimization of <i>Ralstonia</i> <i>eutropha</i> membrane-bound- hydrogenase on conductive surfaces	Nina Heidary, AK Anna Fischer, TU Berlin	BEL 301
13:45-14:15	CO-oxidation by Ni,Fe-containing CO- dehydrogenases	Jochen Fessler, AK Holger Dobbek, HU Berlin	BEL 301
14:15-14:45	Novel Aldehyde Oxidoreductase: Electrochemical Characterization and Biosensor Application	Artavazd Badalyan, AK Ulla Wollenberger, Uni Potsdam	BEL 301
14:45-15:15	<i>Coffee & Tea</i>		BEL 301
15:15-15:45	Characterization of the oxygen tolerant and NAD-dependent formate dehydrogenase from <i>Rhodobacter</i> <i>capsulatus</i> .	Tobias Hartmann, AK Silke Leimkühler, Uni Potsdam	BEL 301
15:45-16:15	Chemical modification and immobilization techniques for the stabilization of the soluble hydrogenase from <i>Ralstonia eutropha</i> H16	Nicole Herr, AK Marion Ansorge-Schumacher, TU Berlin	BEL 301
16:15-16:45	Protein engineering with non canonical amino acids	Alessandro de Simone, AK Nediljko Budisa, TU Berlin	BEL 301
16:45- 17:00	Closing remarks		BEL 301

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The workshop mainly addresses the UniCat research bands D4/E4 “Biocatalysis in Cellular Systems” and D3/E3 “Activation of H/O Systems” but is open to all interested participants.

Dr. Kylie Vincent, Inorganic Chemistry, University of Oxford, UK – Clara Immerwahr Award 2012 (<http://research.chem.ox.ac.uk/kylie-vincent.aspx>) and

Prof. Peter Leadlay, University of Cambridge, UK – Alexander von Humboldt Prize (<http://www.bio.cam.ac.uk/~pflgroup/>), will participate and support the workshop as chairs.

Together with the guest speakers a number of BIG-NSE and UniCat students will present their research in biocatalysis. The minisymposium is an excellent opportunity to meet and discuss results with excellent scientists in a relaxed atmosphere and a chance to establish new collaborations. Thus BIG-NSE and UniCat students are cordially invited to send a one page abstract to:

Lars.Lauterbach@biologie.hu-berlin.de or Jennifer.Jaitzig@mailbox.tu-berlin.de

Please sign up for the workshop until 16 June 2012 via email.

Guest Lecturers In Special UniCat Lectures:

Dr. Bettina Nestl, Institute of Technical Biochemistry, University of Stuttgart.
Her group is dedicated to optimization of different enzymatic systems for biotransformations. Their activities cover protein engineering, assay development and enzyme reaction design.
Special Lecture: **Mon 23-07-2012, 5:15 pm**, TU Berlin, Building C, Lecture Hall C 264
Title: "*Chemistry-Based Enzyme Engineering in Biocatalysis*"

Dr. Florian Hollfelder, Department of Biochemistry, University of Cambridge, UK
His group is interested in gaining a fundamental understanding of the principles responsible for molecular recognition processes in chemistry and biology. They therefore investigate enzyme mechanisms, catalytic promiscuity and directed evolution.
Special UniCat Lecture: **Tue 24-07-2012, 9:15 am**, TU Berlin, Building C, Lecture Hall C 264
Title: "*Enzyme Promiscuity and Evolution*"

Date: Monday, July 23, 2012 – Tuesday, July 24, 2012

Time: 9:00 am until around 6:30 pm

Location: TU Berlin Charlottenburg, Catalysis Inn, Villa Bell, Marchstr. 6, 10587 Berlin Seminar room BEL 301

Organizers: : Jennifer Jaitzig (TUB) and Lars Lauterbach (HUB)

Please note updates of events on www.unicat.tu-berlin.de

Guests are cordially invited to attend!