67 Mosbacher Kolloquium

March 31 - April 2, 2016

PROTEIN DESIGN -FROM FIRST PRINCIPLES TO BIOMEDICAL APPLICATIONS

Program



Scientific Organizers

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Harald Kolmar Technische Universität Darmstadt Darmstadt, Germany

Reinhard Sterner Universität Regensburg Regensburg, Germany

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WELCOME ADDRESS

Dear Colleagues,

The traditional spring meetings of the German Society for Biochemistry and Molecular Biology (GBM) are held annually in the picturesque town of Mosbach to promote the exchange of scientific ideas and to foster the education of young scientists. The scientific theme of the 67th meeting is "Protein Design: From First Principles to Biomedical Applications".

The ability to construct tailor-made proteins is a long-standing goal in biochemistry. This problem is tightly linked to a profound understanding of how a protein sequence determines its structure and function. Based on existing information different approaches are used in design. If for example the three-dimensional structure of an enzyme with bound ligand in its active site is known, targeted amino acid changes can adjust substrate specificity or stereo-selectivity. These rational approaches have profited from the use of new and powerful computational techniques, which have even allowed scientists to redesign enzymes for the catalysis of non-natural reactions. If less information is available, the imitation of natural evolution through random mutagenesis followed by selection is used to generate proteins with improved characteristics. Both rational/computational design and laboratory

evolution have been applied with great success in recent years.

Beyond its value for basic research and our understanding of protein folding, protein design is directly applicable in the chemical and pharmaceutical industry. Its uses range from the construction of efficient and environmentally friendly catalysts for the synthesis of fine chemicals to optimized antibodies for tumor therapies.

At the meeting, emerging concepts will be discussed by leading international experts covering the different facets of the field. The topics include de novo design, computational approaches, laboratory evolution and applications of protein design in chemistry and biomedicine.

We look forward to welcoming you in Mosbach.

Birte Höcker Harald Kolmar Reinhard Sterner



16:00 - 19:30	Workshop: Funding opportunities in
	Germany – current possibilities and
	chances for the future
	(Chair: M. Feige/J. Hennig/
	Working group Young Investigators)
17:00 - 20:00	Arrival and registration
18:00 - 19:30	Introductory lecture ("primer") on
	Protein Design
	Birte Höcker / Reinhard Sterner /
	Harald Kolmar
20:00 - 22:00	Get-together and welcome reception
	by Johannes Buchner (president of the
	GBM/city hall)





Primer on Protein Design

The organizers offer a brief introduction into the conference topic for attendees mainly at the undergraduate and graduate student level. The presentation will summarize basic and medical aspects of previous and current research in this area, and describe the technologies used.

Welcome Reception

The Steering Committee of the German Society for Biochemistry and Molecular Biology (Gesellschaft für Biochemie und Molekularbiologie, GBM) and the city of Mosbach invite you to a welcome reception at 8 p.m. in the city hall (Rathaus, Marktplatz/ Hauptstraße) in Mosbach (to end about 10 p.m. - no registration required)

We thank the city of Mosbach for the kind hospitality.

Program

THURSDAY, MARCH 31

00.50 00.00	
08:50 - 09:00	D i l = 10; (0 i = cif = 0 i =)
	Reinhard Sterner (Scientific Organizer)
	Johannes Buchner (President of the GBM)
00.00 12.00	$C_{\text{rest}} = 1$ (Checkin A. Leases)
09:00 - 12:00	Session 1 (Chair: A. Lupas):
	De novo protein design
09:00 - 09:30	William F. DeGrado / San Francisco [USA]
	De novo protein design of metalloproteins
	De novo protein design of metanoproteins
09:30 - 09:45	Short talk:
	Ross Anderson / Bristol [UK]
	Construction and in vivo assembly of
	a catalytically proficient hymortherma
	a catalytically proficient, hyperthermo-
	stable de novo peroxidase
09.45 - 10.15	Michael Hecht / Princeton [USA]
07.45 - 10.15	Sectoria in a life with an an and matrice
	Sustaining life with genes and proteins
	designed de novo
10.15 - 10.45	Coffee breek
10.15 - 10.45	Conce break
10:45 - 11:15	P. Leslie Dutton / Philadelphia [USA]
	Toward the biogenesis of manmade
	oxidoreductases working in cells
11:15 - 11:45	Dek N. Woolfson / Bristol [UK]
	Expanding the universe of protein struc-
	tures through rational design
12:00 - 13:00	Lunch break
12.00	
12:00 - 13:15	Meet the Prof (Chair: I. Hilberath)
	Guest: Donald Hilvert (Room Darre)
13:00 - 14:30	Poster Session I (even numbers)



THURSDAY, MARCH 31

14:30 - 17:0	00 Session 2 (Chair: R. Jerala): Computational design	
14:30 - 15:0	00 David Baker / Seattle [USA] De novo protein design	
15:00 - 15:	15 Short talk:Julia Shifman / Jerusalem [IL]Binding cold-spots in protein evolution and design	
15:15 - 15:	45 Tanja Kortemme / San Francisco [USA] Computational design of reprogrammed and new protein functions	
15:45 - 16: 16:15 - 16:	 Coffee break Sarel Fleishman / Rehovot [IL] Computational design of binders and enzymes using natural sequences and conformations 	
17:00 - 17:	 Bayer HealthCare PhD Prize (Chair: R. Lill): Tobias Wauer /Cambridge [UK] Parkin: structure and activation 	
17:15 - 18:	55 GBM General Meeting	
19:00 - 20:0	00 Feodor Lynen Lecture (Chair: R. Goody): Donald Hilvert / Zürich [CH] Nearer to nature: design and optimization of artificial enzymes	
20:00 - 21:	30 Lynen reception	
20:00 - 21:	30 Poster session II (all numbers)	
22.00 - 24.0	00 Party & Dance (org. by Junior GBM)	



09:00 - 12:00 Session 3 (Chair: F. X. Schmid): Directed evolution 09:00 - 09:30 Frances Arnold / Pasadena [USA] Innovation by evolution: expanding the enzyme universe 09:30 - 09:45 Short talk: Wolfgang Hoyer / Düsseldorf [DE] Engineered binding proteins to amyloidogenic intrinsically disordered proteins 09:45 - 10:15 Dan S. Tawfik / Rehovot [IL] How do proteins evolve? 10:15 - 10:45 Coffee break 10:45 - 11:15 Andreas Plückthun / Zürich [CH] The challenge of binding peptides in a modular, sequence-specific manner 11:15 - 11:45 Florian Hollfelder / Cambridge [UK] Multiple catalytic promiscuity in the alkaline phosphatase superfamily: rules and tools 12:00 - 13:00 Lunch break 12:00 - 13:15 Meet the Prof (Chairs: P. van Roye, H. Fleckenstein) Guests: Frances Arnold (Room Darre) Emmanuelle Charpentier (Room Tenne)

13:00 - 14:30 Poster Session III (odd numbers)



14:30 - 17:00	Session 4 (Chair: F. Seebeck): Applied protein design	
14:30 - 15:00	Jennifer Cochran / Stanford [USA] Engineered proteins for visualizing and treating disease	
15:00 - 15:15	Short talk: Aitziber Cortajarena / Madrid [ES] Designed protein scaffolds as biomolecular templates for functional materials and sensors	
15:15 - 15:45	Arne Skerra / München [DE] New concepts for biopharmaceutical drug development from protein design: Anticalins [®] and PASylation [®]	11
15:45 - 16:15	Coffee break	
16:15 - 16:45	Annette Beck-Sickinger / Leipzig [DE] Semi-synthesis of proteins to expand bio- logical function	
16:45 - 17:20	Junior-GBM-Session: Bernhard Hauer / Stuttgart [DE] Exploiting squalene hopene cyclases and their catalytic Brønsted acid for non- natural reactions	
17:30 - 18:30	Otto Warburg Medal (Chair: J. Buchner): Emmanuelle Charpentier /Berlin [DE] CRISPR-Cas9: biological roles, mecha- nisms and evolution	



09:00 - 12:00	Session 5 (Chair: U. Hahn):
	Chemical approaches to protein desing
09:00 - 09:30	Henning Mootz / Münster [DE]
	Engineered intein tools for manipulating
	protein structure and function
	protein structure and function
09:30 - 09:45	Short talk:
	Tessa Lühmann / Würzburg [DE]
	Online monitoring and high throughput
	omme montoring and night throughput
	screening of unnatural amino acid inte-
	gration by genetic code expansion in
	Escherichia coli
09:45 - 10:15	Andrea Rentmeister / Münster [DE]
	Site-specific modification of mRNA using
	promiscuous enzymes
10:15 - 10:45	Coffee break
10:45 - 11:15	Andreas Marx/ Konstanz [DE]
	Mimicking Ubiquitin conjugation by
	click chemistry
11:15 - 11:45	Uwe Bornscheuer / Greifswald [DE]
	Protein discovery, engineering and
	application in biocatalysis
	application in biocatalysis
12:00 - 12:20	Poster prizes and closing remarks
-11.00 11.00	Birte Höcker (Scientific Organizer)
	Jonannes Herrmann (Vice President
	of the GBM)

BAYER HEALTHCARE PHD PRIZE

Prize Lectures

For the ninth time the German Society for Biochemistry and Molecular Biology (GBM) awards the best PhD thesis of the last year.

We honor

Tobias Wauer

from the Emmanuel College (Cambridge, UK) for his outstanding research.

Date: March 31, 2016 at 5 p.m.







For his outstanding achievements in biochemistry the German Society for Biochemistry and Molecular Biology (GBM) honors

Donald Hilvert

from the Eidgenössische Technische Hochschule ETHZ (Zürich, Schweiz) with the Lynen Medal on

Thursday, March 31, at 7 p.m.

followed by the Lynen Lecture and the Lynen Reception for all participants of the conference.



The Lynen Lecture is named after the famous German biochemist Feodor Lynen. He had a major impact on the development of biochemistry after the Second World War. His studies were devoted to the understanding of chemical details of metabolic processes in living cells and he was very supportive and active in science politics.

His work connected chemistry, medicine and biology and he strongly promoted the connection of German scientists to colleagues in the United States, Israel, Japan and China. And Feodor Lynen has been the vice president of the GBM from 1953 – 1956.

OTTO WARBURG MEDAL

Prize Lectures

This year the GBM will honor

Emmanuelle Charpentier

from the Max Planck Institute for Infection Biology (Berlin, Germany) with the Otto Warburg Medal. Professor Charpentier will receive the highest award in Germany for biochemists and molecular biologists for developing a method that helps to repair defective DNA sequences.

The award ceremony and award lecture will take place on

Friday, April 1, at 5.30 p.m.

The award promotes outstanding scientific excellence and encourages ground-breaking achievements in the field of fundamental biochemical and molecular biological research.

Since 1963 the Otto Warburg Medal is intended to commemorate the outstanding achievements of Otto Heinrich Warburg. Elsevier and its flagship title *Biochimica et Biophysica Acta* (BBA) are exclusive sponsors of the Medal. To emphasize the importance of excellent scientific research and motivate young researchers to achieve outstanding results, the prize









- current possibilities and chances for the future

The GBM working group "Young Investigators" kindly invites post-docs and young group leaders to a discussion of the current funding situation in Germany with respect to young group leaders. A critical phase in an academic career is the step towards independence and the formation of an independent scientific research group. This transition requires appropriate funding. However it is our opinion that funding options in Germany at this stage of one's career are very limited, barring a few notable exceptions such as the DFG's Emmy-Noether program.

We provide the opportunity for an open discussion between post-docs/young group leaders and the major funding bodies.

4 p.m. Introduction of current funding opportunities by representatives of funding organisations:

Thomas StratmannERC/KOWIGerlind WallonEMBONikolai RafflerDFGAnja FließVW-StiftungHelke HillebrandEMBL

5 p.m. Podium discussion

6.30 p.m. Get together

Wednesday, March 30, Room Tenne

Not only science 111111111111 MEET THE PROF

How do you imagine your scientific career?

The Junior GBM will organize the established event "Meet the Prof" with distinguished speakers from science and research.

In an informal atmosphere you will get the chance to ask the questions which keep you up at night - e.g. how do I make a career in science? Did the speaker had fun on his/her scientific path and which experiences were decisive? You are welcome to join and ask further questions.

Session I (Chair: T. Hilberath) Thursday, March 31, 12 p.m., Room Darre Guest: Donald Hilvert

Session II (Chair: P. van Roye) Friday, April 1, 12 p.m., Room Darre Guest: Frances Arnold

Session III (Chair: H. Fleckenstein) Friday, April 1, 12 p.m., Room Tenne Guest: Emmanuelle Charpentier

Since the rooms are limited in space a registration is required.





Welcome reception

The Steering Committee of the German Society for Biochemistry and Molecular Biology (GBM) and the city of Mosbach invite you to a welcome reception.

Wednesday, March 30, 8 p.m. City hall (Rathaus, Marktplatz/ Hauptstraße)

Lynen reception

The GBM Steering Committee invites you to a reception in honor of Feodor Lynen after the Lynen Lecture.

Thursday, March 31, 8 p.m. Alte Mälzerei

Party & Dance

The Junior GBM is organizing an informal get together with dance. For all participants!



Thursday, March 31, 10 p.m. - 12 a.m. Alte Mälzerei, Lecture hall

BEFORE THE KOLLOQUIUM

General Information

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Accommodation

Accommodation can be booked through Städtisches Verkehrsamt (Tourist office). The hotel capacity is limited in Mosbach and the tourist office has the overview of the vacancies. You can use the accommodation form on meeting website.

For further questions concerning hotel reservation please contact the tourist office (Tel. +49 6261 9188-20, tourist.info@mosbach.de).

Registration

	Fee
members* academia	260€
non-members academia	350€
undergraduate members*	60€
undergraduate non-members	85€
graduate members*	100€
graduate non-members	125€
retiree members*	125€
retiree non-members	180 €
members* industry	340 €
non-members industry	430 €

*Member of the GBM, VAAM, DGZ, Dechema, GdCh

An onsite registration is possible. Please ask for it at the registration desk during the opening hours.



JOURNEY AND ARRIVAL

General Information

Venue

Mosbach is located on the railway line (S-Bahn) Mannheim-Heidelberg-Mosbach-Osterburken, 45 kilometres east of Heidelberg.

The nearest airport is Frankfurt/Main. There are convenient train connections from Frankfurt airport station to Mannheim and from there to Mosbach.

By car: From Frankfurt / Heidelberg: Motorway A6 exit Sinsheim - then B292 to Mosbach From Stuttgart / Heilbronn: A6 exit Neckarsulm - B27 to Mosbach From Würzburg / Nürnberg: A81 exit Osterburken, B 292 to Mosbach.

The congress center is located just above the old city centre. When arriving by car, please follow the yellow signs to parking areas P5 "Alte Mälzerei" or P6 "Altstadt".

Alte Maelzerei | Alte Bergsteige 7 | 74821 Mosbach



Proceedings

Your name badge, program, abstract booklet are available at the registration desk.

We kindly ask to wear your name badge as an entry ticket during the whole meeting.



General Information

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Conference office

	Opening hours
Wed., March 30	05.00 p.m 07.45 p.m.
Thu., March 31	08.00 a.m 04.30 p.m.
Fri., April 1	08.30 a.m 04.30 p.m.
Sat., April 2	08.30 a.m 11.00 a.m.

Telephone and Fax numbers during the Kolloquium:

Phone	+49 (0) 6261 9292-78
Fax	+49 (0) 6261 9292-79

Internet

There will be two wireless LAN access points in the foyer next to the registration desk.

SSID: AMSSID: KongressUsername: gbmPassword: gbm-2016Key: gbm-2016(Registration on browser)(WPA2 encryption)

Lunch & coffee breaks

Coffee, tea and mineral water will be provided for free during the coffee breaks.

Lunch is available at your own expense in the conference center or you can also visit one of the restaurants in the city of Mosbach.





Posters

The posters should be presented in portrait format (DIN A0 resp. ~120 x 85 cm)

Poster sessions: Thu., March 31, 1 p.m. - 2.30 p.m. - even numbers Thu., March 31, 8 p.m. - 9.30 p.m. - all numbers Fri., April 1, 1 p.m. - 2.30 p.m. - odd numbers

During the poster sessions the presenting authors are requested to stay near their posters. Posters should be presented throughout the whole meeting.

Poster numbers: Please see the poster list on page 26 for poster numbers.

Poster prizes:

The best three posters will be awarded (with certificate and $300 \in$).

The winners will be announced at the end of the kolloquium on Saturday. To receive the price, personal attendance is required.

Exhibitions

INDUSTRIAL EXHIBITION

Please visit the booths of our partners!





Herolab **()** biomol







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List of posters

AUTHOR (POSTER NUMBER), TITLE

Aksu, Metin (O-01) Structure of the exportin Xpo4 in complex with RanGTP and the hypusine-containing translation factor eIF5A

Alva Kullanja, Vikram (O-02) How did nature design the first folded proteins?

Anderson, Ross (A-01) Construction and in vivo assembly of a catalytically proficient, hyperthermostable de novo peroxidase

Andersson, Ken (O-03) Development and optimization of an E. coli-based display platform for selection of affinity proteins.

Arndt, Katja $\,$ (A-02) Analysis of Selected and Designed Chimeric D- and L- α -Helix Assemblies

Aupic, Jana (B-01) Computational approaches to the design of a topological coiledcoil based tetrahedral fold

Baker, Emily (A-03) A new autonomous and discretely folded peptide motif for chemical and synthetic biology

Banda, Jesús (B-02) Change in protein-ligand specificity through statistical coupling analysis

Barkovskiy, Mikhail (O-39) Anticalin against colchicine – a possible antidote for acute colchicine overdose

Barna, Andrea (C-01) Development of modular peptide binders based on the armadillo repeat protein scaffold

SORTED BY PRESENTING AUTHOR

Bartlett, Gail (A-04) Developing tools to map the energy landscapes of de novo proteins

Bass, Tarek (D-01) Bivalent Affibody molecules targeting HER3 exhibit anti-tumor effects in vitro and in vivo

Bassler, Jens (D-02) Trimeric Autotransporter Adhesins: a versatile platform for the design and cell surface presentation of protein fibers

Becher, Kira-Sophie (C-02) Evolving split inteins using bacterial autodisplay

Beier, Andy (B-03) Investigations about the cofactor specificity of a cyclohexanone monooxygenase

Berntsson, Benjamin (D-03) Galactosynthases for Use in Organic Synthesis

Bisterfeld, Carolin (D-04) Acetaldehyde-dependent aldolases in organic synthesis – learning from mechanistic studies

Blank, Kerstin (D-05) Coiled coils as mechanical building blocks

Bocola, Marco (B-04) From Sequence to Function, QM MM and Virtual Screening identify natural function and substrate scope.

Bozic Abram, Sabina (A-05) Designed polypeptide trigons as the platform for in vivo evaluation of modular protein design building blocks



List of posters

AUTHOR (POSTER NUMBER), TITLE

Burton, Antony (A-06) Installing Catalytic Activity into a Completely de Novo Protein Framework

Busch, Florian (O-04) Native Mass Spectrometry as a Structural Biology Tool

Classen, Thomas (D-06) A rational approach towards stereocomplementary variants of the ene reductase YqjM

Cortajarena, Aitziber L. (D-07) Designed protein scaffolds as biomolecular templates for functional materials and sensors

Dawson, William (A-07) Design, construction and characterisation of fully de novo α -helical barrel proteins

Dickmann, David (D-08) Towards synthetic applications of cytochrome P450 BM3 monooxygenase

Doerr, Mark (C-03) Looking on Enzyme Libraries from a New Perspective: The splitGFP-System to Normalize Enzyme Activities in Highthroughput Screenings.

Drobnak, Igor (A-08) Thermodynamic investigation of designed topologically folded proteins

ElGamacy, Mohammad (A-09) De novo protein design from super-secondary structures

Ernst, Robert (O-05) A eukaryotic sensor for membrane lipid saturation.

SORTED BY PRESENTING AUTHOR

Falck, Georg (D-09) Analysis of Formylglycine-tagged antibody constructs

Farrants, Helen (E-01) Reversible modulation of a protein-protein interaction with molecular tethers

Feiner, Rebecca (D-10) Recombinant Adeno-associated virus rAAV for tumor therapy engineering of capsid and genetic modifications

Feldmeier, Kaspar (B-05) Rational design of an active catalytic triad

Fiebig, Timm (D-11) The capsule polymerases of Neisseria meningitidis serogroups A and X have the potential to greatly facilitate vaccine production in the future

Figueroa, Maximiliano (A-10) The unexpected structure of the designed protein octarellin v.1 forms a challenge for protein structure prediction tools

Franz, Sophie (O-06) Structure and function of the animal-like cryptochrome from Chlamydomonas reinhardtii

Glock, Philipp (D-12) Control of Min protein self-organization with a peptide photoswitch

Goethe, Martin (B-06) Correcting Free Energy Expressions for Thermal Motion

Grad, Emilia (D-13) Mechanical Manipulation of Protein Activity



List of posters

AUTHOR (POSTER NUMBER), TITLE

Grayson, Katie (O-07) Tat-mediated recognition and export of the folded state of a wholly synthetic protein in Escherichia coli

Gremer, Lothar (D-14) Mosd1, an all-D-enantiomeric peptide identified by competitive mirror image phage display, eliminates toxic amyloid-β oligomers

Güler, Rezan (O-08) Novel affinity binders for neutralization of vascular endothelial growth factor (VEGF) signaling

Hansen, Dennis (D-16) Engineering of a novel enzyme activity. Sialo-core 1 endoglycosidase processing O-glycosylation.

Hansen, Simon (D-15) Design and applications of a GFP-binding protein with picomolar affinity.

Heal, Jack (B-07) Applying Graph Theory to Protein Structures: An Atlas of Coiled Coils.

Heberlein, Magdalena (C-04) Evolution of enzyme specificity in the alkaline phosphatase superfamily.

Heidrich, Jennifer (O-09) Membrane interaction of the cyanobacterial IM30 protein mediates membrane fusion

Herbring, Valentina (D-17) Engineered stabilization and conformational arrest of the antigen translocation complex TAP

Heyne, Michael (C-05) Mapping Binding Landscapes Of Different Trypsin-BPTI Complexes By Experimental And Computational Methods



SORTED BY PRESENTING AUTHOR

Hiblot, Julien (D-18) Engineering of allosteric self-labelling proteins to develop a neuronal signal integrator.

Hoffmann, Stefan (C-06) Long-range transcriptional interference in E. coli used to construct a dual positive selection system for genetic switches

Højgaard, Casper (O-10) A Protein without Charges Feeling Good

Holinski, Alexandra (O-11) Using ancestral sequence reconstruction to characterize an allosteric bi-enzyme complex

Hoyer, Wolfgang (D-19) Engineered binding proteins to amyloidogenic intrinsically disordered proteins

Iossifidou, Maria (D-20) puSmall molecules acting as partial ligands to manilate stability and peptide loading of MHC Class I proteins

Jin, Fan (O-12) Engineering Novel Chemotaxis Receptors for Biosensory Applications

Johansson, Kristoffer E. (B-08) How to Improve the Success Rate of Computational Protein Design?

Klinker, Stefan (O-13) Decoding the interaction of hepatitis C viral NS5A and human tyrosine kinase c-Src

Knop, Matthias (D-21) Enhancement of in vitro activity of the formylglycine generating enzyme by copper I



List of posters

AUTHOR (POSTER NUMBER), TITLE

Kofoed, Christian (D-22) Split-click protein chemistry for recombinant production of toxic proteases

Könning, Doreen (C-07) Isolation of pH-dependent IgNAR variable domains from a semisynthetic, histidine-doped master library

Kretschmer, Simon (D-23) Biochemical engineering of a reconstituted protein oscillator

Kükenshöner, Tim (C-08) Monobodies – Engineered proteins to target cancer cells.

Kunstmann, Sonja (D-24) Structural-based approach for the design of a high affinity carbohydrate binding bacteriophage tailspike protein

Langosch, Dieter (A-11) De novo designed conformationally flexible transmembrane peptides promote membrane fusion via lipid acyl chain exposure

Lapenta, Fabio (A-12) De novo design of in vivo folding modular topological proteins

Lassak, Jürgen (O-14) The sweet aspect in polyproline protein synthesis - Argininerhamnosylation of translation elongation factor EF P by the novel glycosyltransferase EarP

Lichtenstein, Bruce (D-25) Design of a targeted intracellular delivery system for protein cargo

Linde, Mona (O-15) The Geranylgeranylglyceryl Phosphate Synthase Enzyme Family: Implications of the Oligomerization State for Stability and Activity

SORTED BY PRESENTING AUTHOR

Litschko, Christa (D-26) The capsule polymerase CslB of Neisseria meningitidis serogroup L catalyses the formation of glycosidic bonds and the transfer of GlcNAc-1-phosphate

Loeffler, Patrick (B-09) A Modular Framework to Extend Rosetta Protocols with Multistate Design

Lühmann, Tessa (D-27) Online monitoring and high throughput screening of unnatural amino acid integration by genetic code expansion in Escherichia coli

Lupas, Andrei (O-16) Proteins from peptides

Martina, Cristina Elisa (A-13) A novel protocol for the design of artificial $(\beta \alpha)_s$ -barrel proteins.

Marx, Patrick (E-02) Mutasynthetic approach towards the synthesis of lignan-derivatives

Meister, Sebastian (O-17) A High-Throughput Method for Functional Selection of Protein-Based Aggregation Inhibitors

Moeller, Marie Sofie (B-10) Barley limit dextrinase inhibitor as backbone for design of proteinaceous inhibitors of industrial starch degrading enzymes

Morath, Volker (D-28) Application of highly active PASylated leptin for the treatment of different metabolic diseases



List of posters

AUTHOR (POSTER NUMBER), TITLE

Muciño Castillo, Estefanía (O-18) Studying the model system ERK2-mAb: determining protein stability using nanoDSF and characterizing the molecular interaction using MicroScale Thermophoresis

Niemann, Hartmut (D-29) Engineered Variants of InIB Distinguish between Functional Interactions and Packing Contacts in Crystal Structures of the InIB:MET Complex

Nilvebrant, Johan (C-09) Antibody libraries based on an autonomous human variable domain

Norn, Christoffer (B-11) Evolution and design of an icosahedral capsid.

Oberdorfer, Gustav (O-19) Parametric design of alpha-helical barrels and pore-like assemblies with high thermodynamic stabilities

Pavlidis, Ioannis (O-20) Novel click-chemistry immobilization approach enables direct in situ monitoring of immobilization quality and yield

Peschke, Theo (O-21) Immobilization of biocatalysts for compartmentalised multistep reactions in microfluidic bioreactors

Petrovic, Dusan (B-12) Illuminating the ferrocene-mediate electron transfer in glucose oxidase

Plach, Maximilian (D-30) Conversion of anthranilate synthase into isochorismate synthase: implications for the evolution of chorismate-utilizing enzymes

SORTED BY PRESENTING AUTHOR

Pleiner, Tino (D-31) Engineering nanobodies for super-resolution imaging and native protein complex isolation

Rabe, Kersten (C-10) Directed protein evolution for thermophile biotechnology

Reiner, Andreas (O-22) Engineering of light-gated glutamate receptors for controlling synaptic signaling

Reisinger, Bernd (O-23) Towards systematic benchmarking of siRNA delivery systems by relative protein quantitation.

Rhys, Guto (A-14) How Amino-acid Selection Affects Interface Specificity, Oligomer State and Global Fold of de novo Coiled Coils

Richter, Florian (O-24) A combined computational / high-throughput screening approach to redesign AA-tRNA synthetase specificity

Rodewald, Fabian (O-40) Structural basis for the display of complex glycans on the surface of the human fertility lipocalin glycodelin

Rohweder, Bettina (C-11) Library selection with a randomized repertoire of phosphatebinding $(\beta \alpha)_{e}$ -barrel enzymes

Rosengarten, Jamila Franca (O-25) Generation of a cloning platform for the soluble expression of Dirigent Proteins in microorganisms.

Roth, Lisa K. (O-26) Binding properties of human endothelial receptors among erythrocytes infected with Plasmodium falciparum using LeGO vector system.



List of posters

AUTHOR (POSTER NUMBER), TITLE

Toledo Patino, Saacnicteh (B-13) The evolution of folds and its application for the design of functional fold-chimeras

Sautner, Viktor (D-32) Converting Transaldolase into Aldolase through Swapping of the Multifunctional Acid-Base Catalyst

Scheck, Andreas (O-27) PTGL – Protein Topology Graph Library: a graph-based tool for protein structure analysis

Schenk, Carla (O-28) Fast determination of protein-ligand complex structures with unassigned NMR HSQC spectra

Schiefner, André (O-29) Oncofetal fibronectin and its specific recognition by anticalins via different modes.

Schmidt, Steffen (B-14) Fuzzle: a database detecting evolutionary conserved protein fold fragments

Schröder, Gunnar (B-15) Protein structure refinement with adaptively restrained homologous replicas

Seebeck, Florian (D-33) Conversion of a non-heme iron-dependent sulfoxide synthase into a thiol dioxygenase by a single point mutation

Seliem, Asmaa (B-16) Hardware Acceleration of Smith-Waterman Algorithm for DNA Sequence Alignment Using FPGA

Sellmann, Carolin (O-30) Keeping the Balance: Selectivity and Efficacy of Bispecific Antibodies

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Shifman, Julia (B-17) Binding cold-spots in protein evolution and design

Spieker, Melanie (O-33) Detailed functional analysis of enzymes involved in the biosynthesis of the telomerase inhibitor Griseorhodin A

Spieler, Valerie (D-34) Clickable engineered cytokines – Controlling macrophage polarization by bio-orthogonal immobilization.

Stiel, André C. (D-35) Protein engineering towards novel chromophores for Optoacoustic imaging

Syrén, Per-Olof (B-19) Exploring water as building bricks in enzyme design

Thomaier, Maren (O-34) Nanodiscs as a suitable tool for studying amyloid-? interaction with membranes

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Wachtel, Rudolf (O-36) Posttranslational modifications of small GTPases as strategy in infection and regulation

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Weißheit, Susann (O-37) Influence of Confinement on an Elastin Mimetic Peptide – T1-NMR Measurements

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