DECHEMA
Biotechnologie

PROGRAMM

26. – 28. April 2023
Kloster Irsee

35. Irseer Naturstofftage
Aktuelle Entwicklungen in der Naturstoff-Forschung

www.dechema.de/Irsee2023

ORGANISER/CONTACT

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LECTURE PROGRAMME

Wednesday, 26 April 2023

11:30 **Beiratssitzung**

13:30 Lunch break

Junior scientists presentations

Chair: T. Opatz, Universität Mainz/D

14:35 **Obligate intracellular Chlamydia as non-model bacteria to study activities of cell wall antibiotics**
B. Henrichfreise[1]; [1] Universität Bonn, Bonn/D

15:00 **Harnessing artificial dichalcogenides as oxidoreductase substrates: from probes to cytotoxic prodrugs**
O. Thorn-Seshold[1]; [1] LMU Munich, München/D

15:25 **Synthetic Plant Glycans as Tools for Studying Cell Wall Biosynthesis**
C. Ruprecht[1]; I. Pasini[2]; F. Pfrengle[3]; [1] Universität für Bodenkultur Wien, Wien/A; [2] Universitat fur Bodenkultur Wien, Wien/A; [3] University of Natural Resources and Life Science Vienna, Wien/A

15:50 Coffee break

Junior scientists presentations

Chair: K. Gademann, Universität Zürich/CH

16:30 **Dismantling the Detox Paradigm - Investigations on Tetrapyrrolic Natural Products as Bioactive Ingredients in Medicinal Plants**
C. Karg[1]; A. Vollmar[1]; S. Moser[1]; [1] Ludwig-Maximilians Universität München (LMU), München/D

16:55 **Chemical labeling for natural product detection and isolation**
C. Hughes, Universität Tübingen/D

17:20 **Biosynthetic Design of Nonribosomal Peptides**
H. Kries[1]; [1] Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie - Hans-Knöll-Institut e.V., Jena/D

18:00 **Dinner**

LECTURE PROGRAMME

Thursday, 27 April 2023

09:00	**Poster short lectures** Chair: Stefanie Grond, Universität Tübingen/D
10:30	Coffee break
11:00	**Poster short lectures and Poster exhibition**
13:00	Lunch break
	Syntheses
	Chair: A. Kirschning[1]; [1]Leibniz Universität Hannover, Hannover/D
14:30	**Synthetic Studies on Complex Natural Products** K. Gademann[1]; [1] Universität Zürich, Zürich/CH
14:55	**Strategies and Tactics in Natural Products as an Engine for Discovery** E. Carreira [1]; [1] ETH Zürich, /D
15:20	**Surprises in the Structural Assignment of Natural Products and Reaction Intermediates** M. Christmann[1]; [1] FU Berlin, Berlin/D
15:45	Coffee break
	Industrial research
	Chair: I. Hartung[1]; [1]Merck KGaA, Darmstadt/D
16:30	**From Nature to the Clinics: The Discovery of BI 907828, a mdm2::p53 Inhibitor** H. Weinstabl[1]; [1] Boehringer Ingelheim RCV GmbH & Co KG, Vienna/A
16:55	**Natural products at Evotec – opportunities for discovery and development of new medicines** J. Glaeser[1]; S. Schuler[1]; [1] Evotec International GmbH, Göttingen/D
17:20	**Natural Products in present-day pharmaceutical industry** K. Buntin[1]; [1] Novartis Institutes of Biomedical Research, Basel/CH
18:00	**Dinner**
	Evening lecture
	Chair: J. Piel[1]; [1]ETH Zürich, Zürich/CH
20:00	**Mining bioactive natural products from marine eukaryotes** B. Moore[1]; [1] Scripps Institution of Oceanography and Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, UC San Diego/USA
21:00	**AWARD CEREMONIES**

LECTURE PROGRAMME

Friday, 28 April 2023

	Biosynthesis & Chemo-enzymatic approaches
	Chair: H. Brötz-Oesterheld, Universität Tübingen/D
08:30	**NRPS engineering: From ecology to application and back** H. Bode[1]; [1] Max-Planck-Institut für terrestrische Mikrobiologie, Marburg/D
08:55	**Crocagins - a curious case of peptide-derived pyrroloindoline alkaloids** J. Köhnke[1]; [1] University of Glasgow, Glasgow/UK
09:20	**Exploiting actinomycetes for natural compound production by using regulatory switches** Y. Mast[1]; [1] Leibniz Institut DSMZ - Deutsche Sammlung für Mikroorganismen und Zellkulturen GmbH, Braunschweig/D
09:45	Coffee break
	Biosynthesis & Chemo-enzymatic approaches
	Chair: P. Stallforth, Leibniz Institut für Naturstoff-Forschung und Infektionsbiologie - Hans-Knöll-Institut e.V., Jena/D
10:30	**Exploiting the biosynthetic potential of cyanobacteria: From genomic mining to chemoenzymatic synthesis** E. Dittmann[1]; [1] Universität Potsdam, Potsdam-Golm/D
10:55	**Discovery and Application of Natural Product Biosynthetic Enzymes for Complex Molecule (Bio-)Synthesis** T. Gulder[1]; [1] TU Dresden, Dresden/D
11:20	**Sodorifen Biosynthesis: The Mysterious Case of a Methylated Sesquiterpene** J. Dickschat[1]; [1] Universität Bonn, Bonn/D
11:45	**Schlussworte**
12:00	**Joint lunch after prior registration** (12:00 – 13:00)
12:30	Bustransfer Kloster Irsee – Bahnhof Kaufbeuren

Unusual Structures

P 01 **The Collembola cuticle: a pool of unique structural motifs**
A. Möllerke[1]; S. Schulz[1]; [1] TU Braunschweig, Braunschweig/D

P 02 **The First Sex Inducing Pheromone in Diatoms**
F. Klapper[1]; C. Kiel[1]; P. Bellstedt[1]; W. Vyverman[2]; G. Pohnert[1]; [1] Friedrich-Schiller-Universität Jena, Jena/D; [2] Ghent University (UGent), Gent/B

P 03 **Untargeted und Targeted Metabolomics zur Optimierung der Kultivierung von Teehortensien**
J. Wellmann[1]; E. Schwarze[1]; B. Zirpel[1]; S. Hillebrand[1]; J. Ley[1]; [1] Symrise AG, Holzminden/D

P 04 **Chemical and biological diversity of secondary metabolites from basidiomycetes**
B. Matio Kemkuignou[1]; K. Hassan[1]; M. Stadler[1]; K. Wittstein[1]; C. Chepkirui[1]; A. Yehia Moussa[2]; C. Decock[3]; J. Matasyoh[4]; M. Kirchenwitz[1]; T. Stradal[1]; M. Rascher-Albaghdadi[5]; R. Köster[5]; [1] HZI, braunschweig, Braunschweig/D; [2] Ain Shams University, Cairo/ET; [3] Université Catholique de Louvain, Louvain-la-Neuve /B; [4] Egerton University, Egerton /EAK; [5] TU Braunschweig, Braunschweig/D

P 05 **Bacterial endosymbionts protect beneficial soil fungus from nematode attack**
H. Büttner[1]; S. Niehs[2]; K. Vandelannoote[3]; Z. Cseresnyés[2]; B. Dose[2]; I. Richter[2]; R. Gerst[1]; K. Scherlach[2]; M. Figge[1]; T. Stinear[3]; S. Pidot[4]; C. Hertweck[1]; [1] Leibniz Institute for Natural Product Research and Infection Biology, Hans Knöll Institut (HKI) / Friedrich Schiller Universität Jena, Jena/D; [2] Leibniz Institute for Natural Product Research and Infection Biology, Hans Knöll Institute (HKI), Jena/D; [3] University of Melbourne, Melbourne/AUS; [4] University of Melbourne , Melbourne/AUS

P 06 **Secondary Metabolism of Early Diverging Fungi**
J. Wurlitzer[1]; J. Rassbach[1]; M. Greßler[1]; [1] Friedrich-Schiller-Universität Jena, Jena/D

P 07 **Microbial symbionts of social insects - Novel natural products and genomic adaption strategies**
C. Beemelmanns[1]; [1] Helmholtz-Institut für Pharmazeutische Forschung Saarland (HIPS), Saarbrücken/D

P 08 **Discovery and Biosynthetic Origin of Cyclopropanol Substituted Toxins in Human Pathogenic Bacteria**
F. Trottmann[1]; K. Ishida[1]; J. Franke[2]; H. Kries[1]; M. Ishida-Ito[1]; A. Stanišić[1]; H. Dahme[1]; I. Richter[1]; M. Groll[3]; C. Hertweck[1]; [1] Leibniz Institut für Naturstoff-Forschung und Infektionsbiologie - Hans-Knöll-Institut e.V., Jena/D; [2] Leibniz Universität Hannover, Hannover/D; [3] Technische Univerisät München, München/D

P 09 **Identification and isolation of savacyclins, novel peptides belonging to a recently discovered class of RiPPs**
D. Iftime[1]; A. Kulik[1]; E. Stegmann[1]; [1] Eberhard Karls Universität Tübingen, Tübingen/D

Total Synthesis

P 10 **Iridium-Catalyzed Regio- and Enantioselective Reverse Prenylation of 3-substituted Indoles: Total synthesis of (-)-Flustramine A**
L. Sander[1]; J. Müller[1]; C. Stark[1]; [1] Universität Hamburg, Hamburg/D

P 11 **Biogenesis- and Structure-Guided Synthesis of Spirochensilide A, B and Asperfloketal A**
M. Alekseychuk[1]; S. Adrian[1]; R. Heinze[2]; P. Heretsch[1]; [1] Leibniz Universität Hannover, Hannover/D; [2] Nuvisan Pharma Services, Berlin/D

P 12 **Studies Toward the Total Synthesis of the Daphniphyllum Alkaloid (±)-Daphnicyclidin A**
J. Gierok[1]; [1] TU Dortmund, Dortmund/D

P 13 **Enantioselective Synthesis of Cripowellin (Aglycone)**
M. Raasch[1]; [1] Johannes Gutenberg-Universität Mainz, Mainz/D

P 14 **Tackling the ABCDEF Ring System of the Tremorgenic Indole Diterpene Janthitrem B**
M. Fresia[1]; A. Dierks[1]; T. Lindel[1]; [1] TU Braunschweig, Braunschweig/D

P 15 **Total Synthesis and Biological Evaluation of the Anti-Inflammatory 13-Hydroxy-14-deoxyoxacyclododecindione**
K. Seipp[1]; [1] Johannes Gutenberg-Universität Mainz, Mainz/D

P 16 **Studies towards the Total Synthesis and Stereochemical Elucidation of Macplocimine A**
S. Stepanova[1]; M. Zechner[1]; K. Altmann[1]; [1] ETH Zürich, Zurich/CH

P 17 **Studies Towards the Total Synthesis of the Polyketide Antibiotics Elsamicin A and B, Chartreusin and the Spiro-Naphthoquinone Chartspiroton**
L. Röder[1]; S. Torres Venegas[1]; T. Magauer[1]; [1] Leopold Franzens Universität Innsbruck, Innsbruck/A

P 18 **Synthesis and evaluation of antibiotic muraymycin conjugates for improved bacterial cellular uptake**
C. Rohrbacher[1]; S. Weck[1]; R. Zscherp[2]; S. Englert[3]; P. Klahn[4]; H. Kolmar[3]; C. Ducho[1]; [1] Universität des Saarlandes, Saarbrücken/D; [2] TU Braunschweig, Braunschweig/D; [3] TU Darmstadt, Darmstadt/D; [4] University of Gothenburg, Göteborg/S

P 19 **Epifadin, a new peptide-polyene-tetramic acid from the human nose microbiome: Studies towards total synthesis**
T. Dema[1]; J. Béltran-Beleña[1]; B. Krismer[1]; A. Peschel[1]; S. Grond[1]; [1] Universität Tübingen, Tübingen/D

P 20 **Bioinspired Asymmetric Total Synthesis of Emeriones A–C**
S. Jänner[1]; D. Isak[1]; A. Miller[1]; [1] German Cancer Research Center (DKFZ), Heidelberg/D

P 21 **Total synthesis of a potential cyclic metabolite of the Microsclerodermin family**
K. Bauer[1]; U. Kazmaier[1]; [1] Universität des Saarlandes, Saarbrücken/D

Methods

P 22 **Native Metabolomics for the Discovery of G-Protein Modulators**
A. Naimi[1]; D. Petras[2]; R. Reher[1]; [1] Philipps-Universität Marburg, Marburg/D; [2] Eberhard Karls Universität Tübingen, Tübingen/D

P 23 **Metabolic Profiling Can Predict Complex Modes of Action for Cytotoxic Drugs**
M. Saoud[1]; R. Rennert[1]; J. Grau[2]; K. Vahabi[1]; I. Grosse[2]; A. Tissier[1]; L. Wessjohann[1]; G. Balcke[1]; [1] Leibniz Institute of Plant Biochemistry (IPB), Halle (Saale)/D; [2] Martin Luther University Halle-Wittenberg, Halle (Saale)/D

P 24 **Natural products with inhibitory properties of the ClpP protease – Discovery, biosynthesis and antibiotic potential**
S. Drees[1]; H. Brötz-Oesterhelt[2]; [1] Eberhard Karls Universität Tübingen, Germany, Tübingen/D; [2] Eberhard Karls Universität Tübingen, Tübingen/D

P 25 **Empowering Natural Products' Potential via Vector Conjugation - A Scope of Suitable Linkerology® Methodologies**
T. Bruckdorfer[1]; [1] Iris Biotech GmbH, Marktredwitz/D

P 26 **Microfluidic Devices as Platform Technology for Natural Product Screening, Synthesis and Derivatization**
S. Schmidt[1]; H. Westphal[2]; R. Warias[2]; C. Schoeder[3]; D. Belder[2]; T. Gulder[1]; [1] Universität Leipzig, Institute of Organic Chemistry, Leipzig/D; [2] Universität Leipzig / Institut für Analytische Chemie, Leipzig/D; [3] Universität Leipzig Institute for Drug Discovery, Leipzig/D

P 27 **In vivo imaging and tracing DEBS3 in Sac. erythrea**
J. Hu[1]; S. Kushnir[1]; F. Schulz[1]; [1] Ruhr Uni Bochum, Bochum/D

Enzymatic syntheses

P 28 **A flavin-dependent oxygenase installs a hydroxyl group at the indole ring of cyclo-L-Trp-L-Leu accompanied by pyrrolidine formation**
D. Janzen[1]; [1] Philipps Universität Marburg, Marburg/D

P 29 **Do unspecific peroxygenases dream of selectivity**
L. Platz[1]; N. Löhr[2]; W. Hüttel[1]; D. Hoffmeister[2]; M. Müller[1]; [1] Albert-Ludwigs-Universität Freiburg, Freiburg/D; [2] Friedrich-Schiller-Universität Jena, Jena/D

P 30 **Post-Cyclisation Skeletal Editing in Plant Triterpenoid Biosynthesis**
L. Chuang[1]; S. Liu[1]; J. Franke[1]; [1] Leibniz Universität Hannover, Hannover/D

P 31 **From smelly sulphur substrates to fragrant flavours – enzymatic synthesis of L-methionine analogues and their usage for alkylation**
M. Mohr[1]; R. Saleem-Batcha[1]; J. Andexer[1]; [1] Albert-Ludwigs-Universität, Freiburg, Freiburg/D

P 32 **Investigations on the C3-Methyltransferase StspM1 and Its Application in Natural Product Synthesis**
M. Haase[1]; B. David[1]; H. Gohlke[1]; J. Pietruszka[1]; [1] Heinrich Heine University Düsseldorf & Forschungszentrum Jülich, Jülich/D

P 33 **Unleashing the potential of RiPP biosynthetic enzymes for the creation of large and diverse compound libraries**
K. Patel[1]; C. Huhn[2]; H. Maric[2]; J. Köhnke[1]; [1] University of Glasgow, Glasgow/UK; [2] Julius-Maximilians-Universität Würzburg, Würzburg/D

Biosynthetic genes

P 34 **Discovery of natural products from metagenomes**
T. Negri[1]; S. Mantri[1]; C. Bağci[1]; N. Ziemert[1]; [1] University of Tübingen, Tübingen/D

P 35 **Ribosomal peptides expanding the natural product structural diversity**
F. Hubrich[1]; N. Bösch[1]; C. Chepkirui[1]; L. Paoli[1]; P. Moosmann[1]; M. Rust[1]; S. Mordhorst[1]; B. Morinaka[2]; M. Gugger[3]; S. Robinson[4]; S. Sunagawa[1]; A. Vagstad[1]; J. Piel[1]; [1] Eidgenössische Technische Hochschule (ETH) Zurich, Zürich/CH; [2] National University of Singapore, Singapore/SGP; [3] Collection of Cyanobacteria, Institute Pasteur, Paris/F; [4] Eawag, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf/CH

P 36 **Peptides with ambiguous molecular shapes: atropo-selective biosynthesis of a new family of complex peptide natural products**
E. Helfrich[1]; [1] Goethe Universität Frankfurt, Frankfurt/D

P 37 **A Single NRPS-Gene Cluster but Two Products – The Case of Pseudomonas sp. RSB5.11**
K. Bhattarai[1]; [1] University of Tuebingen, Tuebingen/D

P 38 **Engineering a Versatile Polyketide Synthase-Based Assembly Line that Gives Access to Designer Molecules**
L. Buyachuihan[1]; Y. Zhao[1]; M. Grininger[1]; [1] Goethe Universität Frankfurt a.M., Frankfurt/D

P 39 **Towards elucidation of the biosynthesis of hyperforin and derivatives in Hypericum perforatum**
H. Sayed[1]; T. Meents[1]; B. Liu[1]; L. Beerhues[1]; I. El-Awaad[1]; [1] Technische Universität Braunschweig, Braunschweig/D

P 40 **Characterization of the Cystargolide Biosynthetic Gene Cluster**
P. Beller[1]; L. Kaysser[2]; [1] Eberhard Karls Universität Tübingen/D; [2] Universität Leipzig/D

P 41 **Elucidation of α,β-unsaturated δ-lactone formation in the biosynthesis of antitumoral polyketides**
L. Nguyen[1]; J. Hoffmann[1]; S. Derra[1]; M. Schröder[1]; F. Hahn[1]; [1] Universität Bayreuth, Bayreuth/D

NOTES

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