



DECHEMA

Biotechnologie

PROGRAMME

22 – 25 September 2013
Frankfurt am Main · Germany

1st European Conference on Natural Products: Research and Applications

www.dechema.de/ECNP



IN COOPERATION WITH



INVITATION

The “Conference on Natural Products: Research and Applications” will bring together international experts from various communities dealing with current topics of bacterial, fungal and plant secondary metabolite research. Special emphasis will be taken to expedite interaction between applied industrial and academic topics such as natural functions of secondary metabolites, physiology and regulation, genome mining, synthetic biology and biodiversity plus exploitation, application and development.

The organisers are looking forward to welcome you in Frankfurt!

SCIENTIFIC COMMITTEE

Chair:

R. Müller Helmholtz Institute for Pharmaceutical Research Saarland, Saarbrücken/D and Helmholtz Centre for Infection Research, Saarbrücken/D

Members:

A. Batzer Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D

F. Bischoff Boehringer Ingelheim Animal Health GmbH, Ingelheim/D

A.A. Brakhage Leibniz Institute for Natural Product Research and Infection Biology e.V. – Hans-Knöll-Institute, Jena/D

G. Bringmann University of Würzburg/D

D. Holtmann DECHEMA-Forschungsinstitut, Frankfurt am Main/D

R. Kerr University of Prince Edward, Island, Charlottetown/CDN

P. Leadlay University of Cambridge/UK

D. Ober University of Kiel/D

S. O'Connor The John Innes Centre, Norwich/UK

J. Piel ETH Zurich/CH

J. Rohr University of Kentucky, Lexington, KY/USA

J. A. Salas University of Oviedo/E

M. Stadler Helmholtz Centre for Infection Research, Braunschweig/D

E. Thines University of Kaiserslautern/D

W. Wohlleben University of Tübingen/D

POSTER PROGRAMME

The poster programme is splitted into 3 sessions. Please find the poster programme at the conference website.

Postersession A: Monday, 23 September 2013 14:00 – 15:00

Postersession B: Tuesday, 24 September 2013 13:45 – 14:45

Postersession C: Wednesday, 25 September 2013 13:45 – 14:45

Sunday, 22 September 2013

17:00 –
19:00 **Registration and Welcome Reception**

Monday, 23 September 2013

9:30 **OPENING SESSION**
K. Wagemann, DECHEMA e.V., Frankfurt/D;
R. Müller, Helmholtz Institute for Pharmaceutical Research Saarland, Saarbrücken/D and Helmholtz Centre for Infection Research, Saarbrücken/D;
E. Dittmann, Universität Potsdam/D and VAAM e.V., Frankfurt/D

EXPLOITING PLANT NATURAL PRODUCTS

*Chairs: D. Ober, University of Kiel/D;
S. O'Connor, The John Innes Centre, Norwich/UK*

9:45 **KEYNOTE LECTURE**
Molecular breeding of medicinal crops and discoveries along the way
I. Graham, University of York/UK

10:30 **Transport of plant natural products – using glucosinolate transport as case study**
B.A. Halkier, University of Copenhagen/DK

11:00 **Coffee Break**

11:30 **Benzyloquinoline alkaloid biosynthesis – a brave new world built on a century of discovery**
P.J. Facchini, University of Calgary/CND

12:00 **The plant cell is a smart green cell factory**
K.-M. Oksman-Caldentey, M. Nees, A. Ritala, S. Häkkinen, L. Nohynek, H. Rischer, VTT Technical Research Centre of Finland, Espoo/FIN

Monday, 23 September 2013

POSTER PRESENTATION

- 12:30 **Poster A 12**
A phenotypic screening toolbox permits the identification of novel compounds with anti-cancer properties derived from marine fungi
 B. Ellinger, European ScreeningPort GmbH, Hamburg/D; J. Landskron, Biotechnology Centre of Oslo/N; A. Prashar, Hypha Discovery Ltd., Uxbridge/UK; J. Silber, Kieler Wirkstoff-Zentrum am Helmholtz-Zentrum für Ozeanforschung (GEOMAR)/D; S. Wrigley, Hypha Discovery Ltd., Uxbridge/UK; K. Tasken, Biotechnology Centre of Oslo/N; A. Labes, Kieler Wirkstoff-Zentrum am Helmholtz-Zentrum für Ozeanforschung (GEOMAR)/D; P. Gribbon, European Screeningport GmbH, Hamburg/D
- 12:40 **Poster A 52**
Application of undifferentiated plant cells for the reliable large scale production of natural substances
 D. Ullisch, M. Pump, K. Schütte, G. Gorr, Phyton Biotech GmbH, Ahrensburg/D
- 12:50 **Poster A 60**
2-Acylcyclohexane-1,3-diones from *Peperomia trineura* and *P. alata*
 E.A. Ferreira, J.B. Reigada, Universidade de São Paulo/BR; M.C.M. Young, Instituto de Botânica, São Paulo/BR; E.F. Guimarães, Instituto de Pesquisa Jardim Botânico, Rio de Janeiro/BR; G.C. Franchi Junior, A.E. Nowill, Universidade de Campinas/BR; J.H.L. Lago, Universidade Federal de São Paulo, Diadema/BR; M.J. Kato, Universidade de São Paulo/BR
- 13:00 Lunch
- 14:00 – 15:00 **Postersession A**

GENOME MINING AND BIODIVERSITY

*Chairs: M. Stadler, Helmholtz Centre for Infection Research, Braunschweig/D;
 J.A. Salas, University of Oviedo/E*

- 15:00 **Chemodiversity and chemiconsistency in *Penicillium*, *Aspergillus* and *Talaromyces***
 J.C. Frisvad, Technical University of Denmark, Lyngby/DK
- 15:30 **Discovery new bioactive metabolites by high quality screening of actinomycetes**
 S. Donadio, KtedoGen/NAICONS, Milano/I
- 16:00 **Activation of silent gene clusters for natural products in actinomycetes**
 J.A. Salas, University of Oviedo/E
- 16:30 Coffee Break

Monday, 23 September 2013

POSTER PRESENTATION

- 17:00 **Second version of versatile *Streptomyces* host for heterologous expression of biosynthetic gene(s) for secondary metabolites**
 H. Ikeda, Kitasato University/J
- 17:30 **Poster A 02**
Evolution of secondary metabolite biosynthesis pathways in marine actinomycetes: clues from genome mining
 S.B. Zotchev, O.N. Sekurova, Norwegian University of Science and Technology, Trondheim/N
- 17:40 **Poster A 20**
Genome mining of lasso peptides from Proteobacteria
 J. Hegemann, M. Zimmermann, S. Zhu, M. Marahiel, University of Marburg/D
- 17:50 **Poster A 03**
Genome mining of animal and plant pathogenic fungi for bioactive metabolites
 Y.H. Chooi, P.S. Solomon, Australian National University, Acton/AUS; Y. Tang, University of California at Los Angeles, CA/USA
- 18:00 End of 1st day
- 19:30 – 23:00 **Conference Dinner at the Restaurant „DEPOT 1899“ in Frankfurt-Sachsenhausen**

Tuesday, 24 September 2013

CHEMICAL AND BIOLOGICAL SYNTHESIS

Chairs: R. Müller, Helmholtz Institute for Pharmaceutical Research Saarland, Saarbrücken/D and Helmholtz Centre for Infection Research, Saarbrücken/D; J.T. Rohr, University of Kentucky, Lexington, KY/USA

- 9:00 **KEYNOTE LECTURE**
Translating fungal chemical biology into human chemical biology
G.F. Bills, The University of Texas, Houston, TX/USA
- 9:45 **Biofunctional enzymes – key features of biosynthetic pathways to natural product drugs**
J.T. Rohr, University of Kentucky, Lexington, KY/USA
- 10:15 **Total-, semi- and mutasynthesis – the trident of natural product synthesis**
A. Kirschning, Leibniz Universität Hannover/D
- 10:45 **Coffee Break**
- 11:15 **Total synthesis of antibacterial natural products and SAR studies**
K.-H. Altmann, ETH Zurich/CH
- 11:45 **Polyketide-terpene natural products from filamentous fungi**
Y. Tang, Y.-H. Chooi, H.-C. Lin, University of California, Los Angeles, CA/USA

POSTER PRESENTATION

- 12:15 **Poster B 30**
Unique β -amino acid biosynthetic pathways involved in bacterial macrolactam polyketides biosynthesis
F. Kudo, M. Takaishi, K. Amagai, T. Eguchi, Tokyo Institute of Technology/J
- 12:25 **Poster B 42**
Synthesis of optically active natural products using chiral building blocks prepared by enzymatic reaction
Y.M. Mizutani, J.N. Nokami, Okayama University of Science/J
- 12:35 **Poster B 71**
Novel synthetic chain termination probes for the investigation of polyketide biosynthesis *in vivo*
J.S. Parascandolo, E. Riva, M. Tosin, University of Warwick, Coventry/UK
- 12:45 **Lunch**
- 13:45 **Postersession B**
- 14:45

Tuesday, 24 September 2013

NATURAL PRODUCTS – SYNTHESIS, DERIVATES AND APPLICATIONS

Chairs: M. Brönstrup, Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D; F. Bischoff, Boehringer Ingelheim Animal Health GmbH, Ingelheim/D

- 14:45 **Efficacy of natural products to reduce the foodborne pathogen, campylobacter in poultry**
D. Donoghue, University of Arkansas, Fayetteville, AR/USA
- 15:15 **Cytotoxic conjugates of Disorazol Z with the LHRH receptor agonistic peptide D-Lys⁶-LHRH as targeted therapy of LHRH-R positive tumors**
B. Aicher, T. Schuster, Æterna Zentaris GmbH, Frankfurt am Main/D; A. Schubert, C. Gründker, University of Göttingen/D; R. Müller, Helmholtz Centre for Infection Research and Pharmaceutical Biotechnology, Saarbrücken and Helmholtz Centre for Infection Research, Saarbrücken/D; E. Günther, M. Gerlach, M. Teifel, Æterna Zentaris GmbH, Frankfurt am Main/D
- 15:45 **From sugar to antimalarial agent artemisinin**
A. Burgard, R. Feling, R. Göller, Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D
- 16:15 **Coffee Break**

POSTER PRESENTATION

- 16:45 **Poster B 18**
DEM30355/A – A novel first in class polyketide from an *Amycolatopsis* sp.
B. Kepplinger, M. Hall, M. Goodfellow, J. Errington, Newcastle University/UK; N. Allenby, Demuris Ltd., Newcastle upon Tyne/UK
- 16:55 **Poster B 69**
Nogalamycin biosynthesis - discovery of an unusual monooxygenase
V. Siitonen, B. Blauenburg, P. Kallio, P. Mäntsälä, M. Metsä-Ketelä, University of Turku/FIN
- 17:05 **Poster B 03**
Prebulbulysin – a new option for the treatment of metastatic cancer
R.M. Wiedmann, S. Braig, M. Singer, F. Förster, University of Munich/D; U. Kazmaier, R. Müller, Helmholtz Institute for Pharmaceutical Research Saarland, Saarbrücken/D and Helmholtz Centre for Infection Research, Saarbrücken/D; A.M. Vollmar, University of Munich/D
- 17:15 **Get-together with drinks and snacks**
- 18:45 **KEYNOTE LECTURE**
Progress on understanding and engineering biosynthetic enzymes and pathways
A.G. Newman, P.A. Storm, C.R.E. Huitt-Roehl, A.L. Vagstad, R.A. Oliver, R.M. Phelan, C.A. Townsend, John Hopkins University, Baltimore, MD/USA
- 19:30 **End of the conference day**

Wednesday, 25 September 2013

PHYSIOLOGY AND REGULATION

Chairs: W. Wohlleben, University of Tübingen/D;
E. Thines, TU Kaiserslautern/D

- 9:00 **KEYNOTE LECTURE**
Understanding and manipulating antibiotic production in actinomycetes
M. Bibb, John Innes Centre, Norwich/UK
- 9:45 **Unravelling the regulatory networks that control sporulation in *Streptomyces***
M. Buttner, John Innes Centre, Norwich/UK
- 10:15 **Fungal siderophore metabolism and its role in physiology and virulence**
H. Haas, Innsbruck Medical University/A
- 10:45 **Coffee Break**
- 11:15 **Coordination of secondary metabolism and differentiation in fungi**
G. Braus, University of Göttingen/D
- 11:45 **Context dependent antibiotic biosynthesis in microorganisms**
C. Hertweck, Leibniz Institute for Natural Product Research and Infection Biology e.V. – Hans-Knöll-Institute, Jena/D

POSTER PRESENTATION

- 12:15 **Poster C 21**
„Glycosylation Switching“: *In vivo* glycosylation of bioactive natural products regulates their mode-of-action
M. Ueda, Tohoku University, Sendai/J
- 12:25 **Poster C 35**
Iron- and haem-binding properties of the sensory protein HbpS from *Streptomyces*
I. Wedderhoff, University of Osnabrück/D; A.E. Torda, University of Hamburg/D;
H. Schrempf, D. Ortiz de Orué Lucana, University of Osnabrück/D
- 12:35 **Poster C 18**
Enhancing production of antitumor mithramycins in *Streptomyces argillaceus* by metabolic engineering
D. Zabala, A.F. Braña, A.B. Flórez, J.A. Salas, C. Méndez, University of Oviedo/E
- 12:45 **Lunch**
- 13:45 **Postersession C**
- 14:45

Wednesday, 25 September 2013

NATURAL FUNCTIONS OF SECONDARY METABOLITES

Chairs: A.A. Brakhage, Leibniz Institute for Natural Product Research and Infection Biology e.V. – Hans-Knöll-Institute, Jena/D; J. Piel, ETH Zurich/CH

- 14:45 **Natural products from entomopathogenic bacteria**
H.B. Bode, University of Frankfurt/D
- 15:15 **Chemical communication in marine plankton**
G. Pohnert, University of Jena/D
- 15:45 **KEYNOTE LECTURE**
New ways to exploit natural products for sustainable pest management
J.A. Pickett, Rothamstead Research, Harpenden/UK
- 16:30 **Coffee Break**
- 17:00 **Making new molecules**
A. Osbourn, John Innes Centre, Norwich/UK

POSTER PRESENTATION

- 17:30 **Poster C 23**
Transposon mutagenesis of *Streptomyces rapamycinicus* to elucidate the interaction with the fungus *Aspergillus nidulans*
T. Netzker, V. Schroeckh, A.A. Brakhage, Leibniz Institute for Natural Product Research and Infection Biology e.V. – Hans-Knöll-Institute, Jena/D
- 17:40 **Poster C 60**
The cyanobacterial hepatotoxin microcystin is interfering with major path of carbon in *Microcystis aeruginosa*
S. Meissner, University of Potsdam/D; J. Fastner, Federal Environmental Agency, Berlin/D;
D. Steinhäuser, Max Planck Institute of Molecular Plant Physiology, Potsdam/D;
E. Dittmann, University of Potsdam/D
- 17:50 **Poster C 46**
The role of *Streptomyces prodiginines* to suppress the fungus *Verticillium dahliae*
H. Meschke, H. Schrempf, University of Osnabrück/D
- 18:00 **End of the conference**

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Novartis Pharma AG
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Sanofi-Aventis Deutschland GmbH
Frankfurt am Main/D



Thermoanalytik Karger
Hettenleidelheim/D

Sunday, 22 September 2013

17:00 – 19:00

Welcome Reception

The conference will start with a welcome reception for all participants on Sunday, 22 September 2013 at 17:00 at the DECHEMA house. Drinks and snacks will be served by invitation of the organisers.

Monday, 23 September 2013

19:30

Conference Dinner

The conference dinner will take place on Monday, 23 September 2013, 19:30 at the DEPOT 1899, an extraordinary Frankfurter restaurant (which was the Frankfurter tram depot in earlier times).

Cost per person: 59 € incl. 19% VAT



© Depot 1899



GENERAL INFORMATION

ORGANISER AND CONFERENCE OFFICE

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ACCOMMODATION

Accommodation has been reserved for conference participants at a special discount. Reservations should be directly made by the participants with the keyword **“Natural Products”** before **15 August 2013**.

Mercure Hotel & Residenz Frankfurt Messe

Voltastr. 29
60486 Frankfurt am Main
Phone: +49 (0)69 7926-0
Fax: +49 (0)69 7926-1606
E-mail: h1204-re3@accor.com
(EZ 95 € incl. breakfast)

The Qube Hotel Frankfurt

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E-mail: qube.frankfurt@melia.com
Internet: www.solmelia.com
(EZ 88 € incl. breakfast)

(prices subject to change)

REGISTRATION

REGISTRATION

Please register online at www.dechema.de/ECNP.

There is no registration deadline as long as free capacity is available.

Please note that registrations received after **30th August 2013** may not appear in the list of participants.

Confirmation of registration and invoice will be sent after receipt of the registration.

REGISTRATION FEES^{*)}

| | Members ¹⁾ | Others |
|------------------------------------|-----------------------|--------|
| Delegate from Industry | 530 € | 545 € |
| Delegate from Academia | 280 € | 295 € |
| Postgraduate Student ²⁾ | 120 € | 135 € |
| Student ²⁾ | 80 € | 95 € |
| Conference Dinner ³⁾ | 59 € | 59 € |

*) No VAT requested according to § 4.21 UStG.

1) Personal DECHEMA-, VDI-GVC-members, EFC/EFCE passport holders and personal VAAM members

2) Proof of status required

3) incl. 19% VAT

CANCELLATION AND REFUNDS

30 € administrative costs will be charged for cancellations of registrations by **30 August 2013**. Thereafter 80% of the registration fee will be charged. Only written cancellations will be accepted. In case of no-show the conference fees won't be refunded and fees not yet paid still have to be paid.

If the event is cancelled by DECHEMA the registration fees for the conference will be refunded. Further claims for compensation are excluded.

ORGANISER AND CONFERENCE OFFICE

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