

3<sup>RD</sup> JAPANESE-GERMAN SYMPOSIUM ON  
THE BIOSYNTHESIS OF NATURAL PRODUCTS

BONN, 25 AND 26 OCTOBER 2024

CONFERENCE CHAIRS

PROF. DR. JEROEN DICKSCHAT, UNIVERSITY OF BONN

PROF. DR. TOMOHISA KUZUYAMA, UNIVERSITY OF TOKYO

VENUE: GERHARD-DOMAGK-STRASSE 1, 53121 BONN

LECTURE THEATER BUILDING IN FRONT OF THE KEKULÉ INSTITUTE, ROOM HS2



## PROGRAM

| Friday, 25 October 2024 |   |  |
|-------------------------|---|--|
| 8.00                    | Opening   |  |
|                         | <i>Session 1 (Chair: Yuta Tsunematsu)</i>         |  |
| 8.10                    | L01: Tobias Gulder, HIPS Saarland                 | (Bio-)Synthesis of Furanolides   |
| 8.30                    | L02: Fumitaka Kudo, Tokyo Institute of Technology | Biosynthetic Studies on Macrolactam Antibiotics  |
| 8.50                    | L03: Robin Teufel, University of Basel            | Biosynthesis and Bioengineering of Bacterial Aromatic Polyketides  |
| 9.10                    | L04: Yohei Morishita, Tohoku University           | Biosynthesis of a protein transport inhibitor, brefeldin A   |
| 9.30                    | L05: Russell Cox, University of Hannover          | Synthesis from Garbage - Making Molecules the Fungal Way   |
|                         |   |  |
| 9.50                    | <i>Coffee</i>                                     |  |
|                         |   |  |
|                         | <i>Session 2 (Chair: Stephanie Grond)</i>         |  |
| 10.30                   | L06: Toshiyuki Wakimoto, Hokkaido University      | Enzymatic Transformation of Icadamide C to Theopederin K in a Marine Sponge Symbiont   |
| 10.50                   | L07: Pierre Stallforth, HKI Jena                  | Natural Products From Interacting Microorganisms and Ancient Microbiomes   |
| 11.10                   | L08: Hiroyasu Onaka, Gakushuin University         | Unnatural Thiopeptide Production using Lactazole, a RIPP Biosynthetic Machinery  |
| 11.30                   | L09: Till Schäberle, University of Gießen         | RiPPs Derivatization – Approaches to Generate New Bicyclic BamA Inhibitors for Drug Development                                |
| 11.50                   | L10: Keishi Ishida, Hans Knöll Institute Jena     | An Enzymatic Prodrug-Like Route to Thio and Selenoamides   |
| 12.10                   | L11: Dan Hu, Jinan University of Guangzhou        | An Unusual Enzymatic Fusion Pattern and an Unprecedented C-C Bond Cleavage in the Biosynthesis of Enfumafungin-type Antibiotic |
|                         |   |  |
| 12.30                   | <i>Lunch</i>                                      |  |
|                         |   |  |
|                         | <i>Session 3 (Chair: Takahiro Mori)</i>           |  |
| 14.00                   | L12: Christine Beemelmans, HIPS Saarland          | NRPS and PKS-based biosynthetic pathways and novel chemistry of symbiotic Actinomycetota                                       |
| 14.20                   | L13: Takeshi Tsunoda, Hokkaido University         | Biosynthetic Studies of Unnatural Peptides   |
| 14.40                   | L14: Max Crüsemann, University of Bonn            | Nitration of a ribosomal pentapeptide generates a noncanonical precursor for nonribosomal peptide synthesis                    |
| 15.00                   | L15: Tomohisa Kuzuyama, University of Tokyo       | Discovery of Type II Polyketide Synthase-like Enzymes for Cispentacin Biosynthesis   |

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| 15.20 | L16: Roderich Süßmuth, TU Berlin               | Albicidin, a Highly Potent Peptide Antibiotic - Synthesis, Mode-of-action and Resistance              |
| 15.40 | L17: Taro Ozaki, Tohoku University             | Exploring the Functional Diversity of Duf3328 Proteins in the Biosynthesis of Fungal Natural Products |
| 16.00 | <i>Coffee</i>                                  |   |
|       | <i>Session 4 (Chair: Jakob Franke)</i>         |   |
| 16.40 | L18: Kazuo Shin-ya, AIST                       | Production of Cannabigerolic Acid in a <i>Streptomyces</i> Host                                       |
| 17.00 | L19: Philipp Heretsch, University of Hannover  | Radical, Polar, or Radical-Polar Crossover?   |
| 17.20 | L20: Yohei Katsuyama, University of Tokyo      | Diversity of Diazo Group Biosynthesis in Actinobacteria   |
| 17.40 | L21: Martin Grininger, University of Frankfurt | Engineering Polyketide Synthases (PKSs) for the Production of New-to-nature Compounds                 |
| 19.30 | <i>Dinner</i>                                  |   |

## PROGRAM

| <b>Saturday, 26 October 2024</b> |   |  |
|----------------------------------|---|--|
|                                  |   |  |
|                                  | <i>Session 5 (Chair: Aya Yoshimura)</i>             |  |
| 8.00                             | L22: Jeroen Dickschat, University of Bonn           | Break – Dance Mechanisms in the Biosynthesis of Non-Canonical Sesquiterpenes                             |
| 8.20                             | L23: Takahiro Mori, University of Tokyo             | Structure-function Analysis of a Novel Sulfonamide Synthase in the Biosynthesis of Altemicidin           |
| 8.40                             | L24: Jakob Franke, University of Hannover           | Sequence Mining in Plants Towards Noncanonical Oxidosqualene Cyclases                                    |
| 9.00                             | L25: Yuta Tsunematsu, Nagoya University             | Synthetic Biology of Natural Products for Drug Discovery   |
| 9.20                             | L26: Jörn Piel, ETH Zürich                          | Complex RiPPs from Well-Known Bacteria   |
| 9.40                             | L27: Yasushi Ogasawara, Hokkaido University         | Biosynthetic Studies of Three-Membered Ring Containing Natural Products                                  |
|                                  |   |  |
| 10.00                            | <i>Group Picture</i>                                |  |
| 10.10                            | <i>Coffee</i>                                       |  |
|                                  |   |  |
|                                  | <i>Session 6 (Chair: Tobias Gulder)</i>             |  |
| 10.40                            | L28: Hiroki Oguri, University of Tokyo              | Biogenetically Inspired Syntheses of Diverse Alkaloidal Scaffolds through Activation of Dihydropyridines |
| 11.00                            | L29: Stephanie Grond, University of Tübingen        | New Antibacterial Ideas from the Human Nose – Lugdunin and Epifadin deliver new structural Motifs        |
| 11.20                            | L30: Shunji Takahashi, RIKEN CSRS                   | Iron – Sulfur Protein Catalyzed [4+2] Cycloadditions in Verticilactam Biosynthesis                       |
| 11.40                            | L31: Georg Pohnert, University of Jena              | Femtomolar Amounts of a Peptide Pheromone are Sufficient to Induce Sexuality in Diatoms                  |
| 12.00                            | L32: Aya Yoshimura, Hokkaido University             | Unlocking Silent Natural Products through Membrane Vesicles-Mediated Bacterial Communication             |
|                                  |   |  |
| 12.20                            | <i>Lunch</i>  |  |
|                                  |   |  |
|                                  | <i>Session 7 (Chair: Taro Ozaki)</i>                |  |
| 14.00                            | L33: Yuki Goto, Kyoto University                    | In Vitro Engineered Biosynthesis for Designer RiPP Analogs   |
| 14.20                            | L34: Eric Helfrich, University of Frankfurt         | Expanding the Biosynthetic Space of Ribosomally Synthesized and Post-Translationally Modified Peptides   |
| 14.40                            | L35: Chitose Maruyama, Fukui Prefectural University | Biosynthesis of Streptothricin-related Compounds   |

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| 15.00 | L36: Helge Bode, MPI Marburg                        | How Natural Products from Bacterial Symbionts Affect the Development of their Nematode Host |
| 15.20 | L37: Yoshitaka Moriwaki, Institute of Science Tokyo | Elucidation of enzymatic reaction mechanisms using model structures and their substrates    |
|       |   |   |
| 15.40 | Closing Remarks                                     |   |