

Curriculum Vitae

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APPOINTMENT

Department of Pharmaceutical Sciences, University of Shizuoka (Prof. Kenji WATANABE)

Assistant Professor 2022–present

Research Assistant Professor 2019–2022

Appointed Assistant Professor 2015–2019

EDUCATION

2015 Ph.D. Pharmaceutical Sciences, Kyoto University (Prof. Hideaki KAKEYA)

2012 M.S. Pharmaceutical Sciences, Kyoto University (Prof. Hideaki KAKEYA)

2010 B.S. Pharmaceutical Sciences, Kyoto University (Prof. Hideaki KAKEYA)

AWARDS

2022 2022 The JSP Award for Young Scientists
The Japanese Society of Pharmacognosy

2017 2017 Young Researcher's Award
The Pharmaceutical Society of Japan, Division of Natural Medicines

Publications

Original Papers

1. **Shinji Kishimoto**, Yuya Matsubara and Kenji Watanabe
“Alkaloid biosynthetic enzyme generates diastereomeric pair via two distinct mechanisms”
J. Am. Chem. Soc., 144, 5485 (2022)
2. Takumi Okamoto, **Shinji Kishimoto** and Kenji Watanabe
“Isolation of natural prodrug-like metabolite by simulating human prodrug activation in filamentous fungus”
Chem. Pharm. Bull., 70, 304 (2022)
3. Shinya Matsuda, Yuta Tsunematsu, Takuma Matsushita, Yuji Ogata, Shihomi Hachiya, **Shinji Kishimoto**, Noriyuki Miyoshi and Kenji Watanabe
“Toward engineered biosynthesis of drugs in human cells”
ChemBioChem, 22, e202100645 (2022)
4. Michio Sato, **Shinji Kishimoto**, Mamoru Yokoyama, Cooper S. Jamieson, Kazuto Narita, Naoya Maeda, Kodai Hara, Hiroshi Hashimoto, Yuta Tsunematsu, K. N. Houk, Yi Tang and Kenji Watanabe
“Catalytic mechanism and *endo*-to-*exo* selectivity reversion of an octalin-forming natural Diels–Alderase”
Nat. Catal., 4, 223 (2021)

5. Takuma Kobayashi, Takeshi Toyoda, Yuya Tajima, **Shinji Kishimoto**, Yuta Tsunematsu, Michio Sato, Kohei Matsushita, Takanori Yamada, Yuko Shimamura, Shuichi Masuda, Masako Ochiai, Kumiko Ogawa, Kenji Watanabe, Takeji Takamura-Enya, Yukari Totsuka, Keiji Wakabayashi and Noriyuki Miyoshi
“*o*-anisidine metabolite in rat urine associated with urinary bladder carcinogenesis”
Chem. Res. Toxicol., 34, 912 (2021)
6. Takahiro Hamoya, Gen Fujii, Yosuke Iizumi, Takumi Narita, Masami Komiya, Yui Matsuzawa, Kohei Miki, Tadashi Kondo, **Shinji Kishimoto**, Kenji Watanabe, Keiji Wakabayashi, Toshiyuki Sakai, Jiro Toshima and Michihiro Mutoh
“Artesunate inhibits intestinal tumorigenesis through inhibiting wnt signaling”
Carcinogenesis, 42, 148 (2021)
7. Takuma Matsushita, **Shinji Kishimoto**, Kodai Hara, Hiroshi Hashimoto and Kenji Watanabe
“Structural and Functional Analyses of a Spiro-Carbon-Forming, Highly Promiscuous Epoxidase from Fungal Natural Product Biosynthesis”
Biochemistry, 59, 4787 (2020)
8. **Shinji Kishimoto**, Yuta Tsunematsu, Takuma Matsushita, Kodai Hara, Hiroshi Hashimoto, Yi Tang and Kenji Watanabe
“Functional and Structural Analyses of trans C-Methyltransferase in Fungal Polyketide Biosynthesis”
Biochemistry, 58, 3933 (2019)
9. **Shinji Kishimoto**, Kodai Hara, Hiroshi Hashimoto, Yuichiro Hirayama, Pier Alexandre Champagne, Kendall N. Houk, Yi Tang and Kenji Watanabe
“Enzymatic one-step ring contraction for quinolone biosynthesis”
Nat. Commun., 9, 2826 (2018).
10. Mamoru Yokoyama, Yuichiro Hirayama, Tsuyoshi Yamamoto, **Shinji Kishimoto**, Yuta Tsunematsu and Kenji Watanabe
“Integration of Chemical, Genetic, and Bioinformatic Approaches Delineates Fungal Polyketide—Peptide Hybrid Biosynthesis”
Org. Lett., 19, 2002-2005 (2017).
11. Michio Sato, Jaclyn M. Winter, **Shinji Kishimoto**, Hiroshi Noguchi, Yi Tang and Kenji Watanabe
“Combinatorial Generation of Chemical Diversity by Redox Enzymes in Chaetoviridin Biosynthesis”
Org. Lett., 18, 1446-1448 (2016)
12. Tsuyoshi Yamamoto, Yuta Tsunematsu, Kodai Hara, Tomohiro Suzuki, **Shinji Kishimoto**, Hirokazu Kawagishi, Hiroshi Noguchi, Hiroshi Hashimoto, Yi Tang, Kinya Hotta and Kenji Watanabe
“Oxidative *trans* to *cis* Isomerization of Olefins in Polyketide Biosynthesis”
Angew. Chem. Int. Ed., 55, 6207-6210 (2016)
13. Hiroki Kato, Yuta Tsunematsu, Tsuyoshi Yamamoto, Takuya Namiki, **Shinji Kishimoto**, Hiroshi Noguchi and Kenji Watanabe
“New natural products isolated from *Metarhizium robertsii* ARSEF 23 by chemical screening and identification of the gene cluster through engineered biosynthesis in *Aspergillus nidulans* A1145”
J. Antibiot., 69, 561-566 (2016)
14. **Shinji Kishimoto**, Shinichi Nishimura, Masaki Hatano, Masayuki Igarashi and Hideaki Kakeya
“Total Synthesis and Antimicrobial Activity of Chlorocatechelin A”
J. Org. Chem., 80, 6076–6082 (2015)
15. **Shinji Kishimoto**, Shinichi Nishimura and Hideaki Kakeya

- “Total Synthesis and Structure Revision of Mirubactin, and Its Iron Binding Activity”
Chem. Lett., 44, 1303-1305 (2015)
16. Aya Yoshimura, **Shinji Kishimoto**, Shinichi Nishimura, Saori Otsuka, Yuki Sakai, Akira Hattori and Hideaki Kakeya.
“Prediction and Determination of the Stereochemistry of the 1,3,5-Trimethyl-Substituted Alkyl Chain in Verucopeptin, a Microbial Metabolite”
J. Org. Chem., 79, 6858-6867 (2014).
17. **Shinji Kishimoto**, Shinichi Nishimura, Akira Hattori, Masafumi Tsujimoto, Masaki Hatano, Masayuki Igarashi and Hideaki Kakeya
“Chlorocatechelins A and B from *Streptomyces* sp.: New Siderophores Containing Chlorinated Catecholate Groups and an Acylguanidine Structure”
Org. Lett., 16, 6108-6111 (2014)
18. **Shinji Kishimoto**, Yuta Tsunematsu, Shinichi Nishimura, Yutaka Hayashi, Akira Hattori and Hideaki Kakeya
“Tumescenamamide C, an antimicrobial cyclic lipodepsipeptide from *Streptomyces* sp.”
Tetrahedron, 68, 5572-5578 (2012).

Reviews

1. Michio Sato, **Shinji Kishimoto**, Hiroshi Noguchi and Kenji Watanabe
“2.17 - Bisindole, Comprehensive Natural Products III”
Chemistry and Biology, Wiley 2020, 2, 467.
2. **Shinji Kishimoto**, Yuichiro Hirayama and Kenji Watanabe
“Polyketide Synthase–Nonribosomal Peptide Synthetase Hybrid Enzymes of Fungi”
The Mycota, XV: Physiology and Genetics (2018).
3. **Shinji Kishimoto**, Yuta Tsunematsu, Michio Sato and Kenji Watanabe
“Elucidation of biosynthetic pathways of natural products”
Chem. Rec. 17, 1-15 (2017).
4. **Shinji Kishimoto**, Michio Sato, Yuta Tsunematsu and Kenji Watanabe
“Evaluation of Biosynthetic Pathway and Engineered Biosynthesis of Alkaloids”
molecules, 21, 1078-1096 (2016).