



広島大学
Hiroshima University

Grad School of Integrated Sciences for Life
Special Seminar

統合生命科学研究科 特別セミナー

Friday, October 4, 2024, 4:30 PM – 5:30 PM
生物生産学部C棟 C301

Translational Natural Product Research



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Natural products and their derivatives have long been used as medicinal agents, and they still make up a significant fraction of clinically approved drugs. Natural product synthesis provides a rich and unparalleled opportunity to develop new synthetic transformations, conceive novel and general strategies to access complex structures and study the mechanism of action of bioactive targets. This lecture will illustrate the opportunities that lie at this interface between synthetic organic chemistry and chemical biology by describing a series of examples that we are actively working on in our laboratory at Peking University. We take inspiration from Mother Nature to study the biosynthesis of plant-derived natural products to elucidate new enzymatic mechanisms and apply the chemoenzymatic approach to prepare complex natural products and their derivatives. Moreover, we further use bioactive natural products to explore new biology and develop novel drug candidates for human diseases.

“Chemoenzymatic Total Synthesis of Alchivemycin A” *Nature Synthesis*, 2024; “Characterization and heterologous reconstitution of *Taxus* biosynthetic enzymes leading to baccatin III” *Science* 2024, 383, 622; “Microbial-host-isozyme analyses reveal microbial DPP4 inhibition as a potential antidiabetic target” *Science* 2023, 381, eadd5787; “Enzymatic control of endo and exo stereoselective Diels-Alder reactions with broad substrate scope” *Nature Catalysis* 2021, 4, 1059; “FAD-dependent Enzyme-Catalysed Intermolecular [4+2] Cycloaddition in Natural Product Biosynthesis” *Nature Chemistry* 2020, 12, 620.

本セミナーは統合生命科学研究科セミナーとして、プログラム共同セミナーの対象です

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