

UNIVERSITY OF RHODE ISLAND
Department of Chemistry
SEMINAR

3:00 P.M., Monday, November 24, 2025
Room 105 – Beupre Center

Prof. Chi P. Ting

Department of Chemistry
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Chemical and Biocatalytic
Synthesis of Amino-Acid Derived
Natural Products

HOST

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Chemical and Biocatalytic Synthesis of Amino-Acid Derived Natural Products

Abstract: Amino acid-derived natural products are ubiquitous in nature and commonly possess therapeutic properties. In this presentation, the chemical and biocatalytic syntheses of amino acid-derived natural products will be discussed. First, a chemoenzymatic synthesis of 13-oxoverruculogen, an anticancer endoperoxide, is achieved using enzymatic C-H peroxidation and transition metal catalyzed C-C bond activation reactions. Central to the synthesis involves the use of a substrate analog for enzymatic endoperoxidation to accomplish the synthesis of 13-oxoverruculogen. The second part of this presentation describes the chemical synthesis of ribosomally-synthesized and post-translationally modified peptides (RiPPs). Enteropeptin A is an antimicrobial RiPP natural product with undefined stereochemical configuration at its thioaminoketal stereocenter. The total synthesis of this compound and its congeners resulted in their structural elucidation and the determination of the stereochemical configuration of the enteropeptins.