Sinergy
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SynCTI
Synthetic Biology for Clinical & Technological Innovation

Seminars

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Discovery and creation of cyclic peptides using synthetic biology

Abstract:

Cyclic peptide natural products are important chemical entities for human health and treating disease. Two relevant examples for infectious disease and food preservation are vancomycin and nisin, respectively. The identification and application of methods that can robustly cyclize peptides has broad applications in research and industry. Of particular interest are technologies that can create novel scaffolds which represent valued IP for translation to industrial applications. I will share how our group targeted a specific superfamily of enzymes and found a broadly distributed and novel enzyme subfamily that creates unique peptide macrocycles. The use of synthetic biology facilitates the discovery, design, and application processes in our lab. Our current objective is to maximize the diversity of chemical entities that can be derived from our enzymes and then move to targeted applications. Some preliminary data will demonstrate the range of peptide scaffolds that can be created and their potential uses.

Bio:

Brandon I Morinaka is an Assistant Professor with the Department of Pharmacy, NUS. He was trained in marine natural products chemistry and obtained his B.S. in Chemistry from UC Santa Cruz (Phil Crews) and Ph.D. in Chemistry from UC San Diego (Ted Molinski). He then carried out postdoctoral research in genome mining and biosynthesis of natural products at the University of Bonn and ETH Zurich (Jörn Piel). He started his independent position at NUS in 2017 with current research interests in posttranslational modifying enzymes from the radical SAM superfamily

Thursday, 18 November 2021, 3pm SGT

Register at : https://qrs.ly/nwcvwg2