

LIACS February Seminar

When: Thursday, February 4, 2021 at 6 PM

Zoom link: Join Zoom Meeting

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Meeting ID: 878 6151 9540

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Speaker: Dr. Sabesan Yoganathan, PhD

Department of Pharmaceutical Sciences

College of Pharmacy and Health Sciences, St. John's University

Seminar title: Investigation of siderophores and their structural derivatives as potential chemotherapeutic agents

Abstract: Siderophores are a diverse class of secondary metabolites secreted by microorganisms under iron-deficient conditions for iron acquisition. Microorganisms utilize dedicated enzymes for siderophore biosynthesis and membrane proteins for transport. Siderophores play an important role in microbial pathogenesis. Siderophore biosynthetic machinery and transport proteins are potential target to develop a new class of antibiotics. Moreover, due to their metal binding properties, and ability to interfere with iron-dependent biological processes, siderophores have emerged as potential anticancer natural products. Our research lab focuses on the synthesis and evaluation of siderophores and their analogs as potential antimicrobial agents and anticancer agents. Azotochelin is one of the catechol-based siderophores that we are currently investigating. This seminar will discuss our efforts towards the development of azotochelin-derivatives as potential chemotherapeutic agents. We have taken a medicinal chemistry approach to understand the structure activity relationship of azotochelin scaffold, and discovered a series of azotochelin analogs with promising anticancer activities. Current efforts are focused on investigating the mechanism of cytotoxicity of these new lead compounds.

Bio:

Dr. Yoganathan is an Associate Professor in the Department of Pharmaceutical Sciences at St. John's University, Queens, New York. He completed his PhD at the University of Alberta, Canada and his postdoctoral tenure at Yale University. His academic and research training is in the area of medicinal chemistry, organic synthesis and natural products drug discovery. At St. John's University, Dr. Yoganathan teaches within the pharmacy program (Pharm.D.) and pharmaceutical sciences graduate program (M.S. and Ph.D.). Research in the Yoganathan lab focuses on developing chemical and biological approaches to discover new natural product derivatives, and synthetic scaffolds as potential drug leads for the treatment of infectious diseases, cancer and inflammatory diseases. Dr. Yoganathan has been actively involved in STEM education through ACS-New York Section. He is the co-director of the annual ACS-Chemagination Science Competition. He was also part of the organizing committee for MARM-2020 and coordinator of MARM2020-Chemagination competition.