

Medicinal Chemistry
STUDENT SEMINAR SERIES

Advances Towards the Development of Small Molecule Pregnancy Associated Plasma Protein A Inhibitors

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Classroom 1544 – North University Building

Key to the successful development of any drug or therapeutic is the identification and validation of a suitable biomolecular target which can be safely and effectively modulated to elicit a clinically relevant effect. Pregnancy associated plasma protein A (PAPP-A) is one such potential target which has gained increasing attention for the treatment of a variety of diseases. Despite this attention, methods to study PAPP-A's role in physiology and disease remain largely constrained to knock-out and knock-down studies with limited throughput and transferability. To address this bottleneck, novel chemical tools are needed to enable the probing of PAPP-A function in a variety of biological contexts. This talk will focus on the avenues we are pursuing for the discovery and design of novel small molecule PAPP-A inhibitors. It will encompass a cheminformatics driven high-throughput screening workflow for the identification of novel inhibitor scaffolds, followed by their biochemical and functional characterization. In parallel, we are studying the endogenous PAPP-A inhibitor stannioclatin 1 (STC1) and will discuss the biophysical and structural characterization of this complex. Finally, the future directions of this work will be highlighted to help guide the study of PAPP-A as a therapeutic target.