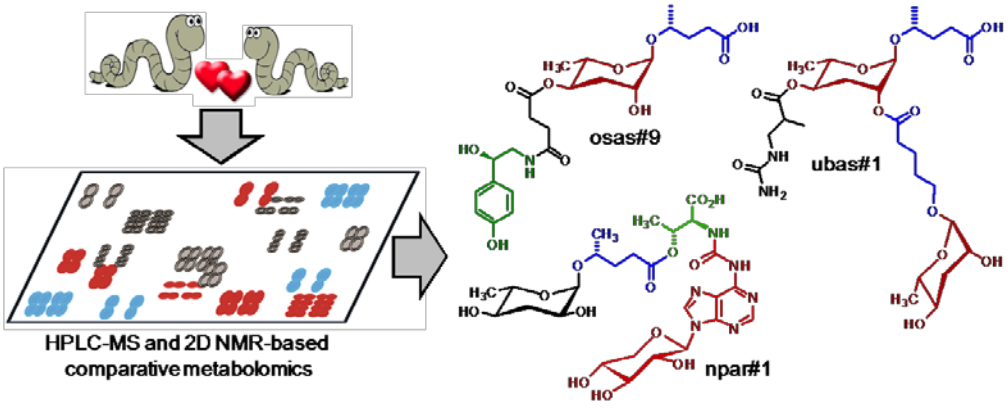
GUEST SPEAKER SEMINAR

Molecular Genetics
UNIVERSITY OF TORONTO

Worm Language: A Natural Combinatorial Library And a Xylopyranose-Based Nucleoside



Worms are amazingly skilled chemists: using simple building blocks from conserved primary metabolism and a strategy of modular assembly, C. elegans and other nematodes create complex molecular architectures to regulate almost every aspect of their development and behavior. This combinatorial library of small-molecule signals controls dauer formation, adult phenotypic plasticity, adult lifespan, attraction of the other sex, aggregation, dispersal, and other behaviors. Most of the identified compounds are based on the dideoxysugars ascarylose or paratose, which serve as scaffolds for attachment of moieties from amino acid, carbohydrate, neurotransmitter, lipid, and nucleoside metabolism, including an unusual xylopyranose-based adenosine derivative. The identification of many new variants of primary metabolism-derived structures that serve important signaling functions in C. elegans provides a strong incentive for a comprehensive re-analysis of metabolism in higher animals, including humans.

Dr. Frank C. Schroeder

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Host: Dr. Peter Roy

Date: Monday, July 7th
Time: 4:00PM
Place: Medical Sciences Building
1 King's College Circle
Room 4171