Graduate Department of Pharmaceutical Sciences

The Graduate Department of Pharmaceutical Sciences
at the Leslie Dan Faculty of Pharmacy

PRESENTS

MRP1 in Oxidative Stress-Induced Cardiac Injury: Friend or Foe?

PRESENTED BY

DR. MARY VORE

Director, Graduate Center for Toxicology
University of Kentucky

Dr. Vore has had a long-standing continuously R01-funded research program since 1979 studying the regulation of the expression and function of hepatic and intestinal transporters in drug disposition, and recently, cardiac transporters. Her work in liver spans over 30 years, and was instrumental in identifying mechanisms of cholestatic liver disease associated with pregnancy and estrogens. She and her collaborators were the first to identify retrieval of apical/canalicular efflux transporters ABCC2 (MRP2) and ABCB11 (BSEP) from the apical membrane of the hepatocyte as a fundamental mechanism for cholestasis induced by estrogen metabolites and toxic bile acids. Dr. Vore's current studies focus on the role of MRP1, an ATP-dependent efflux transporter (ABCC1), in protecting the heart against oxidative stress induced by a cardiotoxic chemotherapeutic agent, Doxorubicin. She has used *in vivo* studies in wild-type and Mrp1 null mice to study cardiac injury; these studies include morphometric analysis of electron microscopy of the heart to demonstrate nuclear and mitochondrial injury, coupled with characterization of redox couples (e.g., GSH/GSSG) and expression of key protective genes in the heart, such as enzymes that mediate synthesis of GSH and superoxide dismutases (SODI, SODII and SODIII). Dr. Vore uses neonatal cultured cardiomyoctyes and cardiofibroblasts from wild-type vs Mrp1 null mice to understand the mechanisms by which Doxorubicin induces dose-dependent nuclear injury, DNA damage, and apoptosis. Specific areas of investigation have included characterization of the effects of Single Nucleotide Polymorphisms (SNPs) on transport function of MRP2 and MRP1 (ABCC1) proteins and the implications of decreased transport function on cellular toxicity.

2:00 p.m., THURSDAY, August 21, 2014
Room 850, 144 College Street
Leslie Dan Faculty of Pharmacy
University of Toronto

Co-Hosted by: Dr. Shinya Ito; tel: (416) 813-5776; email: shinya.ito@sickkids.ca
Department of Pharmacology
Dr. Reina Bendayan; tel: (416) 978-6979; email: r.bendayan@utoronto.ca
Department of Pharmaceutical Sciences

UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

Leslie L. Dan Pharmacy Building 144 College Street, Toronto, ON M5S 3M2