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**“Assessment of in vivo free radicals
in various pre-clinical diseases models:
From diabetes to neurological disorders”**

**Wed. Nov. 4, 2015
MCKN 031 @ 2:30 pm**

Oxidative stress plays a major role in many diseases such as diabetes, sepsis, neuroinflammation and cancers. In vivo levels of trapped macromolecular radicals in various mouse disease models are uniquely detected by combining molecular magnetic resonance imaging (mMRI) and immuno-spin-trapping (IST) techniques. Specifically, combined IST and mMRI were used to detect in situ levels of spin-trapped radicals in brain tissues from mice with gliomas, amyotrophic lateral sclerosis (ALS), or sepsis, as well as livers, lungs, kidneys and hearts of diabetic mice. The nitron spin trap DMPO (5,5-dimethyl pyrroline N-oxide) was administered prior to injection of an anti-DMPO probe (anti-DMPO antibody covalently bound to an albumin-Gd (gadolinium)-DTPA (diethylene triamine penta acetic acid)-biotin MRI contrast agent) to trap disease-associated free radicals. mMRI detected the presence of anti-DMPO adducts by either a significant sustained increase in MR signal intensity or a significant decrease in T1 relaxation (a contrast agent signaling MRI parameter). This is a novel approach to noninvasively image in vivo levels of macromolecular radicals within any disease model and assess the heterogeneous distribution of trapped free radicals in a whole mouse or in particular tissues of interest. Applications of the approach in disease models of diabetes, septic encephalopathy, amyotrophic lateral sclerosis (ALS) and gliomas will be presented.

Fall 2015 Schedule

Oct. 7th	Dr. Michael Moran, University of Toronto and Hospital for Sick Children (Host: Dr. N. Jones)
Oct. 21st	Dr. Tracy Raivio, University of Alberta (Host: Dr. C. Whitfield)
Nov 4th	Dr Rheal Towner, Oklahoma Medical Research Foundation (Host: Dr. D. Josephy)
Nov 18th	Dr. David Evans, University of Alberta (Host: Dr. P. Krell)

“A GREAT OPPORTUNITY TO HEAR LEADING RESEARCHERS IN THE SCIENTIFIC COMMUNITY DISCUSS THEIR WORK”

*** ALL WELCOME TO ATTEND ***

*** COFFEE, TEA AND TIMBITS ***

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