

4th Annual Meeting of the Oxidative Stress Consortium on Health and Disease 2004 Program

University of Toronto May 21st-23rd 2004

FRIDAY, May 21

12:00 Registration

12:30-12:40 General Welcome

Dean Hindmarsh and Peter O'Brien, Faculty of Pharmacy, University of Toronto

Session I: Pathogenesis of Oxidative Stress

Chair: Peter Pennefather

12:40-1:10 Peter J. O'Brien and trainee-Arno Siraki (Faculty of Pharmacy, U of T) Early toxicity screening of candidate drugs for oxidative stress

1:10-1:40 Jack Uetrecht (Faculty of Pharmacy, U of T) Mechanisms of idiosyncratic drug reactions.

1:40-2:10 Jack Bend (UWO) Bilirubin and arsenite mediated changes in drug metabolizing enzymes; role of oxidant stress.

2:10-2:40 Bernhard Juurlink (Saskatchewan Stroke Research Centre, U of Sask) Dietary phase 2 protein inducers inhibit oxidative stress-driven aging-related pathologies

2:40-2:55 Coffee/Tea break

2:55-3:25 Peter G. Wells (Faculty of Pharmacy, U of T) Oxidative stress in birth defects and neurodegeneration

3:25-3:55 Gediminas Cepinskas (Department of Physiology and Pharmacology, UWO) Oxidative Stress in the brain during sepsis

3:55-4:25 Jacques Huot (Department of Medicine, Laval University) Oxidative stress signalling to cytoskeleton dynamics

4:25-4:55 Rick Austin (Department of Pathology, McMaster University) The pathogenesis of endoplasmic reticulum stress

4:55-5:25 Bill Milgram (Department of Pharmacology, U of T) Retardation of neurobiological aging in beagle dogs by an antioxidant fortified diet: a two year longitudinal study

5:25-6:00 Coffee/Tea Break

FRIDAY, May 21

6:00-7:00PM Public lecture

John Wilson (Department of Physiology and Pharmacology, UWO) Vitamin C antioxidant therapy really benefit our health?

7:15PM Graduate Student and Post Doc Pub organized by Pharmaceutical Sciences Graduate Student Association (Rm 102-Faculty of Pharmacy).

SATURDAY, May 22

Session II: Oxidative Stress, Cardiovascular disease and iron homeostasis

Chair: Bernhard Juurlink

8:00-8:30 Pawan Singal (U of Manitoba) Oxidative Stress, Cytokines and Heart Failure

8:30-9:00 Naranjan S. Dhalla (Institute of Cardiovascular Sciences, U of Manitoba) Role of oxidative stress in remodeling of subcellular organelles in the heart.

9:00-9:30 Ashok Grover (Department of Medicine, McMaster University) ATP-induced ascorbate release from pig coronary artery endothelial cells

9:30-10:00 Peter Yu (U of Sask) Involvement of semicarbazide-sensitive amine oxidase (SSAO)-mediated oxidative deamination in vascular damages associated with diabetic complications and other disorders

10:00-10:15 Coffee/Tea Break

10:15 -10:45 Peter Backx (Department of Physiology, U of T) Oxidative Stress, iron and cardiovascular function

10:45-11:15 Prem Ponka (McGill University) Induction of heme oxygenase-1 by oxidative stress does not apparently increase cytosolic iron levels

11:15 -11:45 Kostas Pantopoulos (McGill University) Iron regulatory proteins

11:45-12:15 Doug Templeton (Department of Laboratory Medicine and Pathobiology, U of T) Cellular Non-transferrin bound iron accumulation

12:15-1:30 Lunch and Poster Session I

SATURDAY, May 22

Poster Session I

1. Beth Acton (U of T) Markers of mitochondrial function reflect quality of murine oocytes
2. Katie Chan (U of T) Hepatocytes as the gold standard for predicting in vivo hepatotoxicity of xenobiotics using accelerated cytotoxicity mechanism screening techniques
3. Cyrstal Lee (U of T) Flurothaldomide: a model compound for determining the stereoselective role of thalidomide teratogenesis
4. Cleo Leuong (U of T) The hepatotoxicity and neurotoxicity of trihaloethanol anesthetics via the action of cytochrome P450 (CYP450) encourage lipid peroxidation in liver and brain
5. Jordan Oliver (UWO) Impaired Hepatic Regeneration in Metallothionein Null Mice After Partial Hepatectomy
6. Julia Perstin (U of T) Embryonic catalase activity during organogenesis with endogenous and phenytoin-enhanced oxidative stress
7. Marija Popovic (U of T) Covalent Modification of Liver and Bone Marrow Tissues by 2-Phenylpropenal in vitro and in vivo
8. Annmarie Ramkisson (U of T) Neuroprotection against endogenous oxidative stress in aging Prostaglandin H synthase-1 (PHS-1) knockout mice
9. Nandita Shangari (U of T) Increase in glyoxal toxicity due to thiamin deficiency: Implications for Diabetes Mellitus

Session III: Therapies, Techniques and New Molecular Targets

Chair: Diana Averill-Bates

- 1:30-2:00 Rob Bristow (Department of Medical Biophysics, U of T) Visualization of nuclear DNA repair complexes in vivo as a means to assess DNA damage and its repair
- 2:00-2:30 Richard Hill (Medical Biophysics, U of T) Oxidative stress in lung tissue following irradiation
- 2:30-3:00 Bob Bruce (Department of Nutrition, U of T) How can we decrease colon cancer risk? Rat partial thiamin deficiency studies

3:00-3:30 Jim Wright (Department of Chemistry, Carlton Univ) Designer antioxidants

3:30-4:00 John Connelly (APOPHARMA) Anti-oxidant activities of some hydroxypyridinones: The importance of physiologically relevant In Vitro studies

4:00-4:15 Coffee/Tea Break

4:15-4:45 Brian Hasinoff (U of Manitoba) Prevention of iron-based doxorubicin cardiotoxicity by dexrazoxane

4:45-5:15 David Josephy (University of Guelph) Environmental mutagenic heterocyclic aromatic amines possible activation by peroxidases in breast milk

5:15-5:45 Raymond Poon (Health Canada) and trainee-Tom Chan (Department of Pharmaceutical Sciences, U of T) Drug and pollutant induced ascorbic acid excretion in experimental animals - Current status and possible mechanisms of action

5:45-7:00 Poster Session II

Poster Session II

10. Carine Filbeen (McGill University) A phosphomimetic mutation at Ser-711 inactivates iron regulatory protein

11. Adriana Krizova (UWO) Effect of HIV-1 Tat Protein Differential Expression on Cellular Sensitivity of Sulphamethoxazole Hydroxylamine (SMX-HA)

12. Margaret Loniewska (U of T) Regional brain activity of G6PD activity in G6PD-normal and mutant G6PD-deficient mice

13. Huiquan Lou (U of Manitoba) Modulation of Mitogen-Activated Protein Kinases by Probucol in Doxorubicin-induced Heart Failure

14. Marc Mikhael (McGill University) The role of nitric oxide in iron metabolism; nitric oxide mediates specific increase of ferritin synthesis independently of iron regulatory proteins

15. Guangjun Nie (McGill University) Overexpression of mitochondrial ferritin induces apparent iron starvation and changes cellular iron distribution

16. Natasha Szuber (McGill University) Iron chelators improve the pathophysiology of beta-thalassemic erythrocytes in vitro and in vivo

17. Jian Wang (McGill University) New insights into the molecular mechanism for iron-mediated degradation of iron regulatory protein 2

7:30PM Banquet in Alumni Hall at Victoria College

SUNDAY, May 23rd

Session IV: Mitochondrial Toxicity and apoptosis

Chair: Pawan Singal

8:00-8:30 Jeff Henderson (Faculty of Pharmacy, U of T) Roles of oxidative stress in neurodegenerative forms of programmed cell death

8:30-9:00 Peter Pennefather (Faculty of Pharmacy, U of T) Contribution of mitochondria to brain oxidative stress

9:00-9:30 Diana Averill (Université du Québec á Montréal) Induction of apoptosis by heat shock: relevance to cancer.

9:30-10:00 George Cherian (Department of Pathology, UWO) Potential role of p53 on differential regulation of signal transduction pathways by copper and zinc

10:00-10:15 Coffee/Tea Break

Session V: Trainee Presentations

Chair: Arno Siraki

10:15-10:30 Feng Wu (Department of Physiology, UWO) NADPH oxidase activity is required for iNOS induction in LPS and INFgamma- stimulated mouse skeletal muscle endothelial cellssion

10:30-10:45 Andre Tanel (Université du Québec á Montréal) Role of caspase activation in apoptosis induced by the aldehyde acrolein

10:45-11:00 Harjot K. Saini (U of Manitoba) Role of Oxidative Stress in Ca²⁺-handling by Cardiomyocytes in Ischemia-Reperfused Hearts

11:00-12:00 Poster Session III

Poster Session III

18. Ahmed Bettaieb (Université du Québec á Montréal) Thermotolerance protects cells against apoptosis induced by oxidative stress and heat shock

19. Chris Feeney (U of T) A cuvette-based fluorometric analysis of mitochondrial membrane potential measured in cultured astrocyte monolayers

20. Ingrid Goh (U of T) Assessment of the Effectiveness and Cost-Effectiveness of Vitamin C and E for the Prevention of Fetal Alcohol Syndrome in Alcohol Exposed Pregnancies and Fetal Alcohol Spectrum Disorders

21. Ping Han (U of T) Free Fatty Acid-induced Hepatic Insulin Resistance: Evidence for a Protein Kinase C-delta, Oxidative Stress, IKKbeta and Insulin Receptor Substrates signaling pathway

22. Osamu Handa (UWO) Septic Plasma Induces Activation of Nuclear Factor kappa B in Astrocytes: Role of NO and Oxidant Stress

23. Garth Oakes (UWO) Bilirubin mediated apoptosis is characterized by the production of ROS, mitochondrial depolarization and Initial Caspase-9 activation in Hepa1c1c7 cells

24. Andrei I. Oprescu (U of T) The antioxidant taurine prevents lipotoxicity on beta cell function in vitro and in vivo

25. E.A. Ostrakhovitch (UWO) Release of AIF and apoptosis in epithelial breast cancer cells after exposure to copper are dependent on p53 status

26. Y.P. Song (UWO) Metallothionein and apoptosis in MCF-7 cells after p53 knockdown by siRNA

12:00PM Closing Remarks and End of Conference