



6th Meeting of the Canadian Oxidative Stress Consortium
Winnipeg, Manitoba, May 7-10, 2009
Institute of Cardiovascular Sciences
St. Boniface General Hospital Research Centre
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The 6th Canadian Oxidative Stress Consortium, Winnipeg, May 7-10, 2009

St. Boniface General Hospital Research Centre, University of Manitoba
351 Tache Avenue, Winnipeg, Canada

Tentative Program (Updated and Uploaded on April 24, 2009)

May 7th (Thursday), 2009 (Foyer and Atrium)

Registration Open 4:00 p.m. – 7:00 p.m.
Reception 6:00 p.m. – 9:00 p.m.

May 8th (Friday), 2009 (Sam Cohen Auditorium)

8:00 a.m. – 5:00 p.m. Registration Open (Foyer)
8:00 a.m. – 8:30 a.m. Opening of Conference
8:30 a.m. – 9:15 a.m. Keynote Talk
Chair: Dr. Grant Pierce (Winnipeg)
Speaker: Dr. Barry Halliwell (Singapore)
“Understanding antioxidants: have we made progress or slipped back?”
9:15 a.m. – 9:45 a.m. Coffee Break (Atrium)
9:45 a.m. – 12:15 p.m.

SYMPOSIA # 1: (Sam Cohen Auditorium)

TITLE: Oxidative Stress in Health and Disease

CO-CHAIRS: James Friel (Winnipeg) and Ghassan Bkaily (Sherbrooke)

Diana Averill-Bates (Montreal)	"Activation of apoptotic signaling cascades by the lipid peroxidation-derived aldehyde acrolein: implications for human health"
James Friel (Winnipeg)	"Exacerbating oxidative stress in the premature infant by current feeding protocols"
Doug Templeton (Toronto)	"Pleiotropic effects of cadmium in cell survival and cell death"
Andrew Halayko (Winnipeg)	"Simvastatin induces apoptosis in human airway mesenchymal cells that involves a novel intrinsic p53-dependent pathway"
Louise Giles (Winnipeg)	"The first breath: protecting the newborn lung"
Michel Lebel (Quebec City)	"The impact of Vitamin C on a mouse model for the premature aging disorder Werner syndrome"

SYMPOSIA # 2: (ICS Library, 3rd Floor – R3030)

TITLE: Nutritional Approaches to Combat Oxidative Stress

CO-CHAIRS: Thomas Netticadan (Winnipeg) and Peter O'Brien (Toronto)

Peter O'Brien (Toronto)	"Endogenous toxins causing oxidative stress: effect of diet/disease"
Giuseppe Mazza (Summerland)	"Anthocyanins and heart health"
Thomas Netticadan (Winnipeg)	"Effects of resveratrol on cardiac hypertrophy due to pressure overload"
Zacharias Suntres (Thunder Bay)	"The role of liposomal antioxidants in oxidative stress"
Sheldon Magder (Montreal)	"Regulation of the inflammatory process by NADPH oxidase"

Peter Zahradka (Winnipeg)	"Are the beneficial actions of phytochemicals due to their anti-oxidant properties or to specific effects on cellular processes?"
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**(Sponsored by Canadian Centre for Agri-Food Research in Health and Medicine (CCARM),
St. Boniface General Hospital Research Centre)**

12:15 p.m. – 2:00 p.m.

Lunch and Poster Judging (Atrium)

2:00 p.m. – 5:00 p.m.

SYMPOSIA # 3: (Sam Cohen Auditorium)

TITLE: Young Investigator Award Symposium

SESSION CHAIR: Jeff Wigle (Winnipeg) and Ashok Grover (Hamilton)

Subhadeep Chakrabarti (Edmonton)	"Protein S-nitrosylation by estrogen in the human vascular endothelium: A novel anti-inflammatory mechanism?"
Yongqiang Chen (Winnipeg)	"Mitochondria-generated superoxide is the major reactive oxygen species regulating starvation-induced autophagy"
Nikolai Chepelev (Ottawa)	"Regulation of Nrf1 levels and ARE binding activity during hypoxia in COS7 cells"
Sanjiv Dhingra (Winnipeg)	"IL-10 and TNF- α cytokine imbalance in cardiomyocyte apoptosis"
Saeid Ghavami (Winnipeg)	"S100A8/A9 induces autophagy and apoptosis via ROS mediated cross-talk between mitochondria and lysosomes and it involves BNIP3"
Rhea Mehta (Toronto)	"The cytoprotective mechanisms of B vitamins and carbonyl scavenging drugs against metal-catalyzed oxidative stress in isolated rat hepatocytes"
Harjot Saini-Chohan (Winnipeg)	"Oxidative stress leads to intracellular calcium-overload due to ischemic-reperfusion injury"

Ganesh Sangle (Winnipeg)	"Impairment of electron transport chain activity in mitochondria of endothelial cells induced by glycated LDL"
Eric Seidlitz (Hamilton)	"A byproduct of glutathione production in cancer cells may cause disruption in bone metabolic processes"
Shan Soe-Lin (Montreal)	"NRAMP1 promotes efficient iron recycling following erythrophagocytosis in vivo"

SYMPOSIA # 4: (ICS Library, 3rd Floor – R3030)

TITLE: Oxidative Stress and Transition Metals

CO-CHAIRS: Brian Hasinoff (Winnipeg) and Michael Spino (Toronto)

Michael Spino (Toronto)	"Clinical evidence of the benefits of preventing iron-induced oxidative damage with a soluble, but permeable iron-chelator"
Prem Ponka (Montreal)	"Iron and Heme: our friends and foes"
Kostas Pantopoulos (Montreal)	"Cellular iron homeostasis and oxidative stress"
Eric Massé (Sherbrooke)	"A small RNA involved in the formation Fe-S clusters"
Brian Hasinoff (Winnipeg)	"The iron chelator Dp44mT does not protect myocytes against doxorubicin"
Richard Austin (Hamilton)	"ATF4 modulates glutathione synthesis, reactive oxygen species production and homocysteine metabolism via the transsulfuration pathway in a cell specific manner"

(Sponsored by Faculty of Pharmacy, University of Manitoba)

6:00 p.m.

Dinner (TBA)

May 9th (Saturday), 2009

8:30 a.m. – 5:00 p.m.

Registration Open (Foyer)

8:30 a.m. – 9:15 a.m.

Keynote Talk

Chair: Dr. Gregory Ross (Sudbury)

Speaker: Dr. Ioav Cabantchik (Jerusalem)
“Disorders associated with iron misdistribution. The therapeutic potential of siderophores”

(Sponsored by Apotex, Canada)

9:15 a.m. – 12:15 p.m.

SYMPOSIA # 5: (Sam Cohen Auditorium)

TITLE: Oxidative Stress in Malignancies

CO-CHAIRS: Jim Davie (Winnipeg) and Kostas Pantopoulos (Montreal)

Jim Davie (Winnipeg)	"Peroxiredoxin 1 association with the cyclooxygenase 2 promoter in estrogen receptor negative breast cancer cells"
Spencer Gibson (Winnipeg)	"Role of reactive oxygen species (ROS) in regulating autophagy in cancer cells"
Jacques Huot (Quebec City)	"Regulation of oxidative stress response in endothelial cells by phosphorylation of tropomyosin-1: Impact on cancer and atherosclerosis"
Gurmit Singh (Hamilton)	"Mechanism(s) associated with reactive oxygen stress in cancer"
Volker Blank (Montreal)	"Acute injury induced by butylated hydroxytoluene: comparative analysis in lung and adipose tissue of wild type and Nrf3-deficient mice"
Ayelén Massó (Holguin)	"Oxidative stress and malignant transformation of oral lesions"

(Sponsored by CancerCare Manitoba)

SYMPOSIA # 6: (ICS Library, 3rd Floor – R3030)

TITLE: Oxidative Stress and Cell Signaling

CO-CHAIRS: Ashok Srivastava (Montreal) and Louise Giles (Winnipeg)

Ashok Srivastava (Montreal)	"Role of calmodulin-dependent protein kinase II in ROS-induced signaling"
Aaron Marshall (Winnipeg)	"Regulation of phosphoinositide 3-kinase signaling by oxidants"
Alison Fox-Robichaud (Hamilton)	"Oxidative stress in severe sepsis: The roles of nitric oxide"
Kenneth Storey (Ottawa)	"Free radicals in a 'radical' stress: lessons from frozen vertebrates"
Ghassan Bkailly (Sherbrooke)	"Nitric oxide and the nucleus revisited"
Ashok Grover (Hamilton)	"Functional linkage between pathways: a novel direction for studies in oxidative stress"

12:15 p.m. – 2:00 p.m.

Lunch and Posters (Atrium)

2:00 p.m. – 5:00 p.m.

SYMPOSIA # 7: (Sam Cohen Auditorium)

TITLE: Career Development Workshops

SESSION CHAIR: Pawan Singal (Winnipeg)

Workshop 1: (1 hr)	Brandy Usick and David Ness, Winnipeg <i>“Workplace relationships: strategies for responding to difficulties between people”</i>
Workshop 2: (1 hr)	Lorrie Kirshenbaum, Winnipeg <i>“The nuts and bolts of grant writing: what you always wanted to know but were afraid to ask”</i>
Workshop 3: (1 hr)	Bram Ramjiawan, Winnipeg <i>“Intellectual property: how to take it to the bank”</i>

SYMPOSIA # 8: (ICS Library, 3rd Floor – R3030)

TITLE: Oxidative Stress and Heart

CO-CHAIRS: Naranjan Dhalla (Winnipeg) and Neelam Khaper (Thunder Bay)

Naranjan Dhalla (Winnipeg)	"Role of Oxidative Stress in subcellular remodeling during the development of Ischemic heart disease"
Elissavet Kardami (Winnipeg)	"FGF-2-cardioprotection against ischemia-reperfusion injury includes protective effects at the mitochondrial level and hyper-phosphorylation of mitochondrial connexin-43"
Neelam Khaper (Thunder Bay)	"Role of beta-3 integrin in cardiomyocyte apoptosis"
Pram Tappia (Winnipeg)	"Phospholipase C as a potential target for cardioprotection during oxidative stress"
Hui Wang (St. Catherines)	"Superoxide mediates ET-1 expression in adventitial fibroblast"
Lingyun (Lily) Wu (Saskatoon)	"Methylglyoxal-induced peroxynitrate production and mitochondrial dysfunction"

(Sponsored by Northern Ontario School of Medicine)

6:30 p.m.

Dinner (TBA)

May 10th (Sunday), 2009

8:15 a.m. – 12:30 p.m.

Registration Open (Foyer)

8:15 a.m. – 11:15 a.m.

SYMPOSIA # 9: (Sam Cohen Auditorium)

TITLE: Oxidative Stress and Diabetes

CO-CHAIRS: Garry Shen (Winnipeg) and Madhu Anand-Srivastava (Montreal)

Wayne Lutt (Winnipeg)	"Attenuation of age- and sucrose-induced insulin resistance and syndrome X by a synergistic antioxidant cocktail"
Subrata Chakrabarti (London)	"Oxidative stress mediated DNA damage and epigenetic alterations leading to tissue damage in diabetes - road to identification of novel treatment targets"
Madhu Anand-Srivastava (Montreal)	"Role of ROS in G-protein signaling in hyperglycemia"
Garry Shen (Winnipeg)	"Oxidative stress and diabetes-associated vascular dysfunction"
Dominic Ng (Toronto)	"The role of HDL-associated enzymes PON1 and LCAT in oxidative stress and diabetogenesis - lessons from genetic models"
Karmin O (Winnipeg)	"Role of oxidative stress and inflammatory response in metabolic disease"

SYMPOSIA # 10: (ICS Library, 3rd Floor – R3030

TITLE: Oxidative Stress in Nervous System

CO-CHAIRS: Peter Wells (Toronto) and Diana Averill-Bates (Montreal)

Peter Wells (Toronto)	"Oxidative stress and DNA damage in neurodevelopmental deficits and neurodegeneration"
Gregory Ross (Sudbury)	"The role of oxidative stress in the Dopamine-induced death of neurons"
Tim Murphy (Vancouver)	"Two-photon imaging of mitochondrial depolarization during stroke in mouse somatosensory cortex in vivo and strategies for in vivo monitoring of glutathione"
J. David Knox (Winnipeg)	"Oxidative stress and prion pathogenesis"

Stephane Bastianetto (Montreal)	"Neuroprotective action of polyphenols in hippocampal cells"
Jack Bend (London)	"Micromolar unconjugated Bilirubin causes oxidation of the disulfide proteome, apoptosis via mitochondrial signaling and upregulation of several genes involved in ER stress"

11:15 a.m. – 12:00 p.m.

Keynote Talk

Chair: Dr. Lorrie Kirshenbaum (Winnipeg)

Speaker: Dr. Peter Liu (Toronto)
"Omics in Oxidative Stress"

12:00 p.m. – 12:15 p.m.

Valedictorian Session: (Sam Cohen Auditorium)

Posters

- P1:** Inhibition of the formation of thionyl-dopamine conjugates by polyphenols. Abdallah Z., Ross G.M., Sudbury.
- P2:** Loss of CRT function inhibits cell-cell communication by increasing connexin43 turnover. Aghasi M., Chahine M., Kardami E., Pierce G., Mesaeli N., Winnipeg.
- P3:** Expression of transcription factors FOXO1 and FOXO3A and genes related to oxidative stress in liver of hibernating ground squirrels. Aguilar A.A., Storey K.B., Ottawa.
- P4:** Congenital absence of NOS3 potentiates left ventricular dysfunction in a murine model of diet induced obesity and chronic pressure overload. Ahmadi R., Santiago J.J., Fang T., Le K., Azordegan N., Bage S., Kroeker A., Harris-Janz S., Zhao Z., Frey M., Walker J., Lytwyn M., Fallah-Rad N., Han C., Colish J., Francis A., Kardami E., Moghadesian M., Jassal D.S., Winnipeg.
- P5:** Intracellular localization of TDAG51 modulates effects on cell death. Al-Bayati H.K., Dickhout J.G., Traunt R., Austin R.C., Hamilton.
- P6:** GRP78: A modulator of tissue factor procoagulant activity. Ali-Hashimi A., Austin, R.C., Hamilton.

- P7:** Protein expression of glutathione S-transferases during anoxia in the marine snail *Littorina Littorea*. Anozie O.O., Storey K.B., Ottawa.
- P8:** Cardiovascular activity and the association between income security with the levels of BMI and fruit/vegetable consumption in Canadian adolescents. Bajaj, A., Luz C., Moghadasian M.H., Singal P.K., Winnipeg.
- P9:** The chemical chaperone 4-phenylbutyrate relieves ER stress and inhibits adipogenesis *in vitro* and in the mouse adipose tissue. Basseri, S., Lhotak S., Austin, R.C., Hamilton.
- P10:** Hypoxic stress-induced regulation of cystathionine- γ -lyase in cardiomyocytes. Bryan, S.A., Yang G., Wang R., Khaper, N., Thunder Bay.
- P11:** Mechanical stretch further increases the effects of oxidized LDL on cell growth through an action on nuclear protein import. Chahine, M.N., Dibrov E., Blackwood D.P., Pierce G.N., Winnipeg.
- P12:** *Chlamydia Pneumoniae* infection induces arterial thickening and impairs contractility in isolated porcine coronary arteries. Deniset, J.F., Cheung P.K.M., Dibrov E., Pierce G.N., Winnipeg.
- P13:** Hypoxia-induced loss of Rb/E2F-1 complexes provokes Bnip3 gene transcription and cell death of ventricular myocytes. Dhingra R., Gang H., Zhang T., Aviv Y., Yurkova N., Kirshenbaum L., Winnipeg.
- P14:** Rat hepatocyte cytotoxicity model for primary hyperoxalurias. Feng C.Y., O'Brien P.J., Toronto.
- P15:** Histone deacetylase-1 induces autophagy in post-natal ventricular myocytes. Gang H., Dhingra R., Yurkova N., Kirshenbaum L., Winnipeg.
- P16:** Connexin43-induced inhibition of cardiomyocyte DNA synthesis is not dependent on downstream activation of TGF β signal transduction. Jeyaraman M., Nickel B., Kardami E., Winnipeg.
- P17:** Regulation of G6PDH by reversible phosphorylation in the hepatopancreas of the anoxia-tolerant common periwinkle, *Littorina*. Lama J., Storey K.B., Ottawa.
- P18:** Resveratrol prevents norepinephrine induced hypertrophy in adult cardiomyocytes. Louis X.L., Thandapilly S.J., Yu L., Wojciechowski P., Yang T., Stringer D.M., Douville J.M., Cheung D. Y.-C., Massaeli H., Zhang S., Wigle J., Kardami E., Zahradka P., Netticadan T. Winnipeg and Kingston.
- P19:** Expression of antioxidant proteins and NF-E2 related factor in response to dehydration in *Xenopus Laevis*. Malik A., Storey K.B., Ottawa.
- P20:** Modulation of Gi protein expression by H₂O₂ in aortic vascular smooth muscle cells. Mbong N., Anand-Srivastava M.B., Montreal.

- P21:** Cardiovascular and metabolic implications of consuming flaxseed: the adipose link. McCullough R.S., Ander B.P., Edel A.E., Dupasquier C.M.C., Dibrov E., Blackwood D.P., Pierce G.N., Winnipeg.
- P22:** The anticancer effect of selium: study of its role in DNA repair activity and resistance to oxidative stress. De Rosa V., Nzengue Y., Diamond A., Favier A., Douki T., Rachidi W., Grenoble and Chicago.
- P23:** Transcriptional regulation of the peroxisome proliferator-activated receptor coactivator-1 α by estrogen related receptor α . Ramjiawan A., Czubryt M.P., Winnipeg.
- P24:** Sodium-calcium exchange mediated contraction in main coronary artery and next branch. Samson S.E., Qayyum F., Al-Bondokji I., Kuszczak I., Grover A.K., Hamilton.
- P25:** Detection of pro-hypertrophic high molecular weight fibroblast growth factor-2 and its paracrine activity in the heart. Santiago J.-J., Ma X., Fandrich R.R., Arora R.C., Kardami E., Winnipeg.
- P26:** Retinoic acid prevents angiotensin II induced apoptosis in adult rat cardiomyocytes. Sharma A., Thangirala S., Dhingra S., Ludke A., Al-Shudiefat A., Bajaj A., Singal P.K., Winnipeg.
- P27:** Cardiac mitochondria-based signal transduction is activated by FGF-2 and prevents calcium-overload induced damage: role of mitochondrial PKC and Connexin 43. Srisakuldee W., Makazan Z., Nickel B.E., Thliveris J.A., Kardami, E., Winnipeg.
- P28:** Inhibitors bioengineered to inhibit different isoforms of plasma membrane Ca²⁺ pumps in vascular smooth muscle and endothelium. Szewczyk M.M., Pande J., Grover A.K., Hamilton.
- P29:** Inhibition of glutamate uptake capacity by poly(ADP-ribose) polymerase-1-induced bioenergetic depletion in cortical astrocytes. Tang K.S., Suh S.W., Swanson R.A., Anderson C.M., Winnipeg and San Francisco.
- P30:** Effect of probucol on gene expression profile of antioxidants and immune system in liver of APO E-KO mice. Xu Z., Azordegan N., Zhao Z., Riediger N., Le K., Othman R., Moghadasian M., Winnipeg.
- P31:** Development of lung adenocarcinoma in mice overexpressing calreticulin under control of the tie-2 promotor. Yeganeh B., Durston M.M., Wigle J.T., Mesaeli N., Winnipeg.
- P32:** Supplementation with dietary ferulic acid lowers urinary excretion of 15-isoprostane F2t, a biomarker of lipid oxidation in apolipoprotein E-knockout mice. Zhao Z., Xu Z., Azordegan N., Le K., Moghadasian M.H., Winnipeg.
- P33:** DNA binding independent regulation of the p21 gene by MEOX2 in endothelial cells. Douville J.M., Cheung D.Y.-C., Herbert K.L., Wigle J.T., Winnipeg.

P34: Prox1 regulation of endothelial cell cycle progression. Baxter S.A., Herbert K., Kim H.-K., Cheung D.Y.-C., Wigle J.T., Winnipeg.

P35: Prox1 regulation of lymphatic endothelial differentiation. Ogutcen E., Wigle J.T., Winnipeg.