

Peroxidase/SFRRRA/J - Joint Day : Thursday 12th September 2013

8.00am – 9.00am: SFRRRA/J registration

Joint 1: Enzyme – mediated reactions

Chairs: Grant Mauk and Shane Thomas

Grand Central, Level 1, Mercure Sydney

- 9.00am – 9.30am **GRANT MAUK**, University of British Columbia, Vancouver, Canada
Catalytic activities of human indoleamine 2,3-dioxygenase
- 9.30am – 10.00am **SHANE THOMAS**, University of New South Wales, Australia
Human indoleamine 2,3-dioxygenase is a catalyst of physiological heme peroxidase reactions: implications for the inhibition of dioxygenase activity by hydrogen peroxide
- 10.00am – 10.15am **KAZUHIRO KATADA**, Kyoto Prefectural University of Medicine, Kyoto, Japan
Role of heme oxygenase (HO) and carbon monoxide (CO) on ischemia-reperfusion-challenged intestinal inflammation
- 10.15am – 10.30am **HIU CHUEN (MAGGIE) LOK**, University of Sydney, NSW, Australia
Glutathione S-transferase and MRP1 form an integrated system involved in the storage and transport of nitric oxide in cells

Morning Tea

10.30am – 11.00am

Pre-function area, Level 2, Mercure Sydney

Joint 2: Myeloperoxidase inhibition and therapeutics #2

Chairs: Pierre van Antwerpen and Anna Klinke

Grand Central, Level 1, Mercure Sydney

- 11.00am – 11.30am **ROLAND STOCKER**, Victor Chang Cardiac Research Institute, NSW, Australia
Inhibition of myeloperoxidase attenuates experimental endothelial dysfunction and atherosclerosis
- 11.30am – 12.00pm **ANNA KLINKE**, University of Cologne, Germany
Myeloperoxidase is critically linked to the development of diastolic heart failure following pressure overload
- 12.00pm – 12.15pm **VALERIA KOSTEVICH**, Institute of Experimental Medicine, RAMS, Saint-Petersburg, Russian Federation
Ceruloplasmin, myeloperoxidase and other secreted neutrophilic proteins in Alzheimer's disease
- 12.15pm – 12.30pm **LUC VANHAMME**, Université Libre de Bruxelles, Brussels, Belgium
Myeloperoxidase oxidized LDLs interfere with tubulogenesis and mobility in endothelial cells

Lunch
12.30pm - 1.30pm
Pre-function area, Level 2, Mercure Sydney

Peroxidase 9: Detection of oxidants

Chairs: : David Pattison and Steve Bottle

Central, Level 2, Mercure Sydney

- 1.30pm – 2.00pm **GUS MAGHZAL**, Victor Chang Cardiac Research Institute, NSW, Australia
Utilisation of hydroethidine and LC/MS/MS for the detection of MPO and EPO activity in vivo
- 2.00pm – 2.30pm **STEVE BOTTLE**, Queensland University of Technology, QLD, Australia
Nitroxides: drugs or detectives?
- 2.30pm – 2.45pm **CONNIE BOON**, Griffith University, QLD, Australia
▶ *Bilirubin inhibits myeloperoxidase-induced hypochlorous acid mediated protein oxidation*
- 2.45pm – 3.00pm **THIERRY FRANCK**, University of Liege, Belgium
An immunological method to combine the measurement of active and total human myeloperoxidase on the same sample from a complex medium

SFRR/J 1: Oxidative stress biomarkers and disease

Chairs: Yorihiro Yamamoto and Andrew Jenner

Town Hall, Level 2, Mercure Sydney

Sponsored by Agilent

- 1.30pm – 2.00pm **STUART CORDWELL**, University of Sydney, NSW, Australia
Functional decoration: post-translational modifications and their crosstalk in myocardial ischemia / reperfusion injury
- 2.00pm – 2.30pm **DES RICHARDSON**, University of Sydney, NSW, Australia
A mouse model of Friedreich's ataxia: treatment by iron supplementation and identification of non-ferritin mitochondrial iron deposits
- 2.30pm – 2.45pm **PATRIC JANSSON**, University of Sydney, NSW, Australia
P-glycoprotein in lysosomes can be hijacked by the iron chelator DP44MT to overcome drug resistance
- 2.45pm – 3.00pm **JEFF COOMBES**, University of Queensland, QLD, Australia
Exercise-induced oxidative stress - biomarker of redox regulation?

Afternoon tea
3.00pm - 3.30pm
Pre-function area, Level 2, Mercure Sydney

Peroxidase 10: Monitoring oxidant formation

Chairs: Tony Kettle and Gus Maghzal

Central, Level 2, Mercure Sydney

- 3.30pm – 4.00pm **MARK HAMPTON**, University of Otago, Christchurch, New Zealand
Peroxiredoxins as biomarkers of oxidative stress
- 4.00pm – 4.30pm **AKIO FUJISAWA**, Tokyo University of Technology, Tokyo, Japan
Parabanic acid as a marker of singlet oxygen production in vivo
- 4.30pm – 4.45pm **REBECCA POYNTON**, University of Otago, Christchurch, New Zealand
▶ *Kinetics and biochemical properties of peroxiredoxin 3 hyperoxidation*
- 4.45pm – 5.00pm **LUKE CARROLL**, The Heart Research Institute, NSW, Australia
▶ *Selenium compounds react with chloramines with high second order rate constants and are potent scavengers of inflammatory oxidants*
- 5.00pm – 5.15pm **ANDREW DAS**, University of Otago, Christchurch, New Zealand
▶ *Detection of glutathione conjugated to oxidised tyrosine residues on proteins*

SFRR/J 2: Oxidants in disease

Chairs: Lindy Fitzgerald and Osamu Handa

Town Hall, Level 2, Mercure Sydney

Sponsored by Agilent

- 3.30pm – 4.00pm **ANDREW JENNER**, University of Wollongong, NSW, Australia
Measurement of lipid peroxidation and cholesterol metabolism in neurodegenerative disease
- 4.00pm – 4.30pm **EMIKO KASAHARA**, Osaka City University, Osaka, Japan
Role of the HPA-axis and mitochondria in LPS-induced septic shock
- 4.30pm – 4.45pm **BELAL CHAMI**, University of Sydney, NSW, Australia
Oxidative damage in the early stages of Alzheimer's disease
- 4.45pm – 5.00pm **NICK HUNT**, University of Sydney, NSW, Australia
Pathogenesis of bacterial meningitis
- 5.00pm – 5.15pm **OSAMU HANDA**, Kyoto Prefectural University of Medicine, Kyoto, Japan
Irsogladine maleate suppresses aspirin-increased small intestinal epithelial cell permeability

Conference Dinner

"Aussie BBQ"

7.00pm – 10.00pm

Grand Central and Terrace, Level 2, Mercure Sydney

SFRRRA/J - Day 2 : Friday 13th September 2013

SFRRRA/J 3: Reactive nitrogen species

Chairs: Guy Jameson and Paul Witting

Central, Level 2, Mercure Sydney

- 9.00am – 9.40am **RAFAEL RADI**, Universidad de la República, Montevideo, Uruguay
Advances on the biological chemistry of peroxyxynitrite and protein tyrosine nitration
- 9.40am – 9.55am **CHRISTINE CHUANG**, The Heart Research Institute, NSW, Australia
Peroxyxynitrite, a lesion oxidant, modulates endothelial cell derived extracellular matrix proteins in human atherosclerotic lesions
- 9.55am – 10.10am **SILVINA BARTESAGHI**, Universidad de la República, Montevideo, Uruguay
Tyrosine nitration in membranes is connected to lipid peroxidation: influence of molecular oxygen levels
- 10.10am – 10.25am **GEORG DEGENDORFER**, The Heart Research Institute, NSW, Australia
Peroxyxynitrous acid mediated oxidation of fibronectin affects protein structure and compromises endothelial cell binding

Morning Tea

10.25am – 11.00am

Pre-function area, Level 2, Mercure Sydney

SFRRRA/J 4: Mitochondria

Chairs: Jiri Neuzil and Robin Smith

Central, Level 2, Mercure Sydney

- 11.00am – 11.30am **ROBIN SMITH**, University of Otago, Dunedin, New Zealand
Detection and estimation of reactive species within mitochondria
- 11.30am – 12.00pm **HIROFUMI MATSUI**, University of Tsukuba, Tsukuba, Japan
Gastric aggressive factors are oxidative stressors
- 12.00pm – 12.15pm **MICHAEL LI-HSUAN HUANG**, University of Sydney, NSW, Australia
Molecular and functional alterations in a mouse cardiac model of Friedreich's ataxia: activation of the integrated stress response, eIF2 α phosphorylation and the induction of downstream targets
- 12.15pm – 12.30pm **DOMINIC LOVE**, The Heart Research Institute, NSW, Australia
The myeloperoxidase-derived oxidant HOSCN induces mitochondrial dysfunction in macrophages

Lunch

12.30pm – 1.30pm

Pre-function area, Level 2

SFRR(A) AGM

12.30pm – 1.30pm

Central, Level 2

SFRRA/J 5: Cardiovascular disease

Chairs: Livia Hool and Andrew Bulmer

Central, Level 2, Mercure Sydney

- 1.30pm – 2.00pm **LIVIA HOOL**, University of Western Australia, WA, Australia
Regulation of the L-type Ca^{2+} channel by free radicals and role in cardiac pathology - targeting the L-type Ca^{2+} channel
- 2.00pm – 2.30pm **GEMMA FIGTREE**, The Kolling Institute, NSW, Australia
Redox regulation of key caveolar proteins and their role in cardiovascular pathophysiology
- 2.30pm – 2.45pm **KEYVAN KARIMI GALOUGAHI**, The Kolling Institute, NSW, Australia
Selective β_3 adrenergic stimulation protects against diabetes-induced vascular dysfunction by re-establishment of nitro-SO-redox balance
- 2.45pm – 3.00pm **JANA PAULECH**, University of Sydney, NSW, Australia
Capturing oxidised cysteine for the study of the myocardial redox proteome

Afternoon tea
3.00pm – 3.30pm
Pre-function area, Level 2, Mercure Sydney

SFRRA/J 6: Cancer and carcinogenesis

Chairs: Shinya Toyokuni and Des Richardson

Central, Level 2, Mercure Sydney

- 3.30pm – 4.00pm **JIRI NEUZIL**, Griffith University, QLD, Australia
Targeting of mitochondrial complexes enhances anti-cancer efficacy
- 4.00pm – 4.30pm **SHINYA TOYOKUNI**, Nagoya University Graduate School of Medicine, Japan
Deferasirox promotes mesenchymal-epithelial transition in crocidolite-induced mesothelial carcinogenesis in rats
- 4.30pm – 4.45pm **SUMIT SAHNI**, University of Sydney, NSW, Australia
N-MYC downregulated gene 1 (NDRG1) suppresses stress-induced autophagy in cancer cells
- 4.45pm – 5.00pm **GOLDIE LUI**, University of Sydney, NSW, Australia
Novel redox-active thiosemicarbazones with potent anti-tumour activity target the PTEN, erk, TGF- β and STAT pathways via NDRG1

SFRRA/J Poster Session
5.00pm – 6.30pm
Town Hall, Level 2, Mercure Sydney

SFRRRA/J - Day 3 : Saturday 14th September 2013

SFRRRA/J 7: Thiols and thiol oxidation

Chairs: Mark Hampton and Kevin Croft

Central, Level 2, Mercure Sydney

- 9.00am – 9.40am **ARNE HOLMGREN**, Karolinska Institutet, Stockholm, Sweden
Thiol redox biology: mechanisms in DNA synthesis, signaling and defense against oxidative stress
- 9.40am – 10.10am **TOSHIHIRO KURAHASHI**, Yamagata University, Yamagata, Japan
Pleiotropic roles of peroxiredoxin 4 in antioxidation, signal regulation and oxidative protein folding
- 10.10am – 10.40am **PHILIP HOGG**, University of New South Wales, NSW, Australia
Control of protein function by allosteric disulphide bonds

Morning Tea

10.40am – 11.00am

Pre-function area, Level 2, Mercure Sydney

SFRRRA/J 8: Oxidants and oxidative processes

Chairs: Jan Gebicki and Stavros Selemidis

Central, Level 2, Mercure Sydney

- 11.00am – 11.30am **YORIHIRO YAMAMOTO**, Tokyo University of Technology, Tokyo, Japan
Singlet oxygen produced from oxidized platinum nanoparticle and hydrogen peroxide
- 11.30am – 11.45am **JAN GEBICKI**, Macquarie University, NSW, Australia
Glutathione peroxide – a new reactive intermediate
- 11.45am – 12.00pm **STAVROS SELEMIDIS**, Monash University, VIC, Australia
Investigations into the roles of NOX2 oxidase and endosomal ROS in influenza A virus- and TLR7-induced innate immune responses in macrophages
- 12.00pm – 12.15pm **LEZANNE OOI**, University of Wollongong, NSW, Australia
Using induced pluripotent stem cell derived neurons to identify drugs that protect against oxidative stress
- 12.15pm – 12.30pm **MELINDA FITZGERALD**, University of Western Australia, WA, Australia
Oxidative stress is associated with reduced density of calcium microdomains in optic nerve vulnerable to secondary degeneration

Lunch

12.30pm – 1.30pm

Pre-function area, Level 2, Mercure Sydney

SFRRRA/J Business Meeting

12.30pm – 1.30pm

Central, Level 2, Mercure Sydney

SFRRRA/J 9: Oxidative damage in cardiovascular disease

Chairs: Gemma Figtree and Grant Drummond

Central, Level 2, Mercure Sydney

- 1.30pm – 2.00pm **GRANT DRUMMOND**, Monash University, VIC, Australia
Increased incidence of athero-thrombotic events in patients with chronic granulomatous disease: a knockout blow for NOX as a therapeutic target?
- 2.00pm – 2.15pm **ANDREW BULMER**, Griffith University, QLD, Australia
Elevated bilirubin protects from oxidative DNA damage in the Gunn rat, but not in the human condition of Gilbert's syndrome
- 2.15pm – 2.30pm **HITESH PESHAVARIYA**, Centre for Eye Research Australia, VIC, Australia
Inhibitors of histone deacetylation suppress NADPH oxidase 4-derived redox signalling and angiogenesis via inhibition of P300 histone acetyltransferase
- 2.30pm – 3.00pm **KEVIN CROFT**, University of Western Australia, WA, Australia
The effect of dietary polyphenol antioxidants on vascular function and blood pressure
- 3.00pm – 3.10pm **MIKE DAVIES**, Chair – Organising Committee
Closing remarks

Afternoon tea

3.10pm

Pre-function area, Level 2, Mercure Sydney