



SFRR E
2019



SCIENTIFIC PROGRAM

SFRR-E 2019 ANNUAL MEETING
“REDOX HOMEOSTASIS: FROM SIGNALING TO DAMAGE”

Day 1 – Wednesday June 19, 2019

8:30-18:30 Registration opens

8:30-9:00 Welcome

Symposium I- Redox and Metabolic Signaling in Cancer

Chairpersons: *Giuseppe Filomeni* (Danish Cancer Society Research Center, Denmark) and *Elena Papaleo* (Danish Cancer Society Research Center, Denmark)

9:00-9:30 The ATM protein kinase and regulation of stress signaling
Tanya T. Paull (The University of Texas at Austin, USA)

9:30-10:00 Targeting the proneoplastic role played by the chaperone TRAP1 in tumor cell mitochondria
Andrea Rasola (University of Padova, Italy)

10:00-10:30 Signaling of S-nitrosylation in cancer: from -omics to structures
Elena Papaleo (Danish Cancer Society Research Center, Denmark)

10:30-11:00 Coffee Break

Leopold Flohe Award Lecture

Chairpersons: **Helmut Sies - Regina Flohe**

11:00-11:35 Nitric oxide bioactivity in the brain - aging and disease

Ana Ledo (University of Coimbra, Portugal)

Catherine Pasquier Award Lecture sponsored by NuSkin

Chairpersons: **Daniela Caporossi - Nesrin Ozer**

11:35-12:10 Involvement of redox imbalance in Rett syndrome pathogenesis and clinical severity

Alessandra Pecorelli (North Carolina State University, USA)

Special Lecture

Chairpersons: **Enrique Cadenas - Giuseppe Poli**

12:10-13:00 Oxygen species in high glucose dependent vascular damage: where do they come from?

Salvator Moncada (King's College London, UK)

13:00-14:00 Lunch and Poster Viewing (Palazzo Bevilacqua)

Symposium II- Recent Advances in Redox Sensing in Cardiac and Vascular Pathophysiology

Chairpersons: *Roland Stocker (University of New South Wales, Australia)* and *Giovanni E. Mann (King's College London, UK)*

14:00-14:30 NADPH oxidases in angiogenesis

Katrin Schröder (Goethe-Universität Frankfurt, Germany)

14:30-15:00 Cysteine-based redox sensing and its role in signaling in cyclic nucleotide- dependent kinases in the cardiovascular system

Philip Eaton (King's College London, UK)

15:00-15:30 Oxidative processes in atherosclerotic plaque destabilization and their utility to image and identify vulnerable plaques

Roland Stocker (University of New South Wales, Australia)

Oral Presentations from selected abstracts

Chairpersons: **Aphrodite Vasilaki - Brigitte Winklhofer-Roob**

15:30-15:45 GSTP1 affects the development and the progression of clear cell renal cell carcinoma

Marija Pljesa-Ercegovac (Institute of Medical and Clinical Biochemistry, Medical Faculty University in Belgrade, Serbia)

15:45-16:00 Antioxidant transcription factor Nrf2 and the circadian molecular clock interact in a tissue-specific, bi-directional manner

Elisabeth Sutton (Institute of Ageing and Chronic Disease, University of Liverpool, Liverpool, UK)

16:00-16:15 Generation of oxidative stress as an anticancer therapeutic strategy

Nadine El Banna (Institut Curie, PSL Research University, Université Paris-Sud, Université Paris-Saclay, Orsay, France)

16:15-16:30 The interactions between the metastasis suppressor, NDRG1, and the endoplasmic reticulum response in cancer cells

Angelica M. Merlot (UNSW Centre for Childhood Cancer Research, University of New South Wales, Sydney, Australia)

16:30-16:45 GSTP1*G/GSTP1*T and GSTO1*A/GSTO2*G haplotypes affect the prostate cancer risk

Ana Savic-Radojevic (Institute of medical and clinical biochemistry, Belgrade, Serbia)

16:45-17:00 Protein denitrosylation controls tumor progression, metabolism and aging

Salvatore Rizza (Cell Stress and Survival Unit, Danish Cancer Society Research Center, Copenhagen, Denmark)

17:00-17:30 Coffee Break

Symposium III- Lifestyle Interventions to Promote Antioxidant Status

Chairpersons: *José Viña (University of Valencia, Spain) and Maria Carmen Gómez-Cabrera (University of Valencia, Spain)*

17:30-18:00 Redox driven synaptic dysfunction in Alzheimer's disease

Viji Ravindranath (Centre for Brain Research, Indian Institute of Science, Bangalore, India)

18:00-18:30 Exercise acts as an antioxidant drug

Maria Carmen Gómez-Cabrera (University of Valencia, Spain)

18:30-19:00 Oxidative stress, telomeres and cellular ageing: What kind of non-drug interventions might break the link?

Jorge D. Erusalimsky (Cardiff Metropolitan University, Cardiff, UK)

19:00-20:30 Poster Viewing (Palazzo Bevilacqua)

20:30 Welcome reception - Castello Estense

Day 2 – Thursday June 20, 2019

8:00-18:30 Registration opens

8:00-9:00 Sunrise Seminar - How to Write a Competitive Grant

Helen Griffiths (University of Surrey, UK)

Symposium IV - The microbiota-gut-brain axis: a journey from dietary nitrate to nitric oxide via inorganic nitrite

Chairpersons: **Ana Ledo** (*University of Coimbra, Portugal*) and **Bárbara S. Rocha** (*University of Coimbra, Portugal*)

9:00-9:30 Bacteria-immune cell interactions at the intestinal Peyer's Patches

Mia Phillipson (*Uppsala University, Sweden*)

9:30-10:00 Microbiota Gut-brain axis regulation of hippocampal neurogenesis and behaviour

Olivia O'Leary (*University College Cork, Ireland*)

10:00-10:30 Redox modulation of systemic metabolic pathways by dietary nitrate: impact on metabolic syndrome

Mattias Carlstrom (*Karolinska Institutet, Sweden*)

10:30-11:00 Coffee Break

SFRRE “Elsevier” Basic Science Award Lecture

Chairpersons: **Kelvin Davies - Leopold Flohe**

11:00-12:00 Oxygen, Sulfur, Selenium, Iron and Lipid Peroxidation: How GPx4 Controls Cell Life and Death

Fulvio Ursini (*University of Padova, Italy*)

Young Investigators Awards (SFRRE and summer school 2018 awardees)

Chairpersons: **Fabio Virgili – Niki Chondrogianni**

12:00-13:00 Ectopic lipid accumulation and biomolecules carbonylation in rat cardiac cells

Giulia Coliva (*Institute of Bioanalytical Chemistry, Faculty of Chemistry and Mineralogy, Leipzig University, Germany*)

Modification of Cys residues in thioredoxin by p-benzoquinone causes inhibition of its catalytic activity and activation of ASK1/p38-MAPK signalling pathway

Nan Shu (*Department of Biomedical Sciences, Panum Institute, University of Copenhagen, Denmark*)

Mitochondrially-targeted deferoxamine induces mitophagy and acts as anti-cancer agent in vivo

Cristian Sandoval-Acuña (*Institute of Biotechnology CAS, Czech Republic*)

Redox and metabolic signatures of premenopausal breast cancer in relation to obesity

Andjelika Kalezić (*Institute for Biological Research "Sinisa Stankovic", University of Belgrade, Belgrade, Serbia*)

Redox regulation of intestinal epithelial permeability

Eleonora Cremonini (*Department of Nutrition, UC Davis, CA- USA*)

13:00-14:00 Lunch and Poster Viewing (Palazzo Bevilacqua)

Symposium V - Air Pollution: Relationship of Particulate Components to Health

Chairpersons: **Henry Jay Forman** (*The University of Southern California, USA*) and **Frank J. Kelly** (*King's College London, UK*)

14:00-14:30 Comparison of airway responses induced in a mouse model by the gas and particulate fractions of gasoline

Krystal Pollitt (*Yale University, USA*)

14:30-15:00 Threat to human health from environmental plastics

Stephanie Wright (*King's College London, UK*)

15:00-15:30 Assays for hazardous components of air pollution

Henry Jay Forman (*The University of Southern California, USA*)

Oral Presentations from selected abstracts

Chairpersons: **Bato Korac – Patricia Oteiza**

15:30-15:45 Simultaneous quantification of oxygen radicals and platelet aggregation highlights the importance of NADPH oxidases in the regulation of thrombus formation in health and disease

Dina Vara (Institute of Biomedical and Clinical Science, University of Exeter Medical School, Exeter, UK).

15:45-16:00 Potential impact of Paraoxonase-1 and Myeloperoxidase on action and quality of HDL

Carlo Cervellati (University of Ferrara, Italy)

16:00-16:15 Automated immuno-histo-enzymatic investigation of metabolic enzyme activity in skin and organotypic skin models shows epidermal metabolism regulation by metformin

Christopher Kremslehner (Department of Dermatology, Medical University of Vienna, Austria)

16:15-16:30 Monitoring of dynamic activity of Nrf2 in live cells by Nrf2 biosensor

Uraivan Panich (Department of Pharmacology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand)

16:30-17:00 Coffee Break

Oral Presentations from selected abstracts

Chairpersons: **Cesar Fraga – Bertrand Friguet**

17:00-17:15 Altered inflammasome machinery as a key player in the perpetuation of Rett syndrome OxInflammation

Valeria Cordone (University of L'Aquila, Italy)

17:15-17:30 Altered mitochondrial morphology, aberrant apoptosis and impaired mitophagy as possible key players in RTT Syndrome pathogenesis

Ilaria Crivellari (University of Ferrara, Italy)

17:30-17:45 Oxidation of disulfide bonds leads to protein glutathionylation

Luke Carroll (University of Copenhagen, Denmark)

17:45-18:00 Understanding how protein S-glutathionylation regulates bioenergetics; implications in the prevention of diet-induced obesity

Ryan J. Mailloux (Memorial University of Newfoundland, Department of Biochemistry, St. John's, Newfoundland and Labrador, Canada)

18:00-19:00 General assembly

18:00-19:30 Poster Viewing (Palazzo Bevilacqua)

19:30-20:30 Opera Concert: Cristian Ricci, Tenor. (Teatro Nuovo)

21:00 Gala Dinner and Awards – Palazzo Roverella

Day 3 – Friday June 21, 2019

8:00-9:00 Sunrise Seminar - How to Write a Great Scientific Paper and Get it Accepted!

Tilman Grune (German Institute of Human Nutrition, Germany)

Anthony Newman (Elsevier)

Symposium VI - Mitochondrial Redox Signalling and Metabolic Adaptation in Hypoxia

Chairpersons: *Antonio Martínez-Ruiz (Instituto de Investigación Sanitaria Princesa, Spain)* and *Bernhard Brüne (Goethe-Universität Frankfurt, Germany)*

9:00-9:30 Redox signaling in acute oxygen sensing

Lin Gao (Instituto de Biomedicina de Sevilla, Universidad de Sevilla, Spain)

9:30-10:00 Mitochondrial metabolic rewiring in cancer cells in response to hypoxia-induced glycolysis

Olivier Feron (Université Catholique de Louvain, Belgium)

10:00-10:30 Mitochondrial Na⁺ import as a key controller of mitochondrial ROS signaling in acute hypoxia

Antonio Martínez-Ruiz (Instituto de Investigación Sanitaria Princesa, Spain)

10:30-11:00 Coffee Break

SFRR Europe Clinical Award Lecture

Chairpersons: **Josiane Cillard – Giovanni Mann**

15:30-16:30 Cell Programs for Elimination of the Unnecessary: Fatal Role of Peroxidized Lipids

Valerian E. Kagan (University of Pittsburgh, USA)

Young Investigators Awards (SFRRE and summer school 2018 awardees)

Chairpersons: **Richard Siow – Clare Hawkins**

12:00-13:00 Iodide modulates myeloperoxidase-derived oxidative damage to extracellular matrix proteins

Luke Gamon (*Department of Biomedical Sciences, Panum Institute, University of Copenhagen, Denmark*)

A novel bioinspired proteasome activator: Potential anti-ageing strategies offered by Mother Nature (but not only)

Nikoletta Papaevgeniou (*Institute of Biology, Medicinal Chemistry and Biotechnology, National Hellenic Research Foundation, Athens, Greece*)

Sulforaphane-induced Nrf2 activation confers maternal and fetal protection following obese insulin-resistant pregnancy

Paraskevi-Maria Psefteli (*School of Cardiovascular Medicine and Sciences, King's British Heart Foundation Centre of Research Excellence*)

Characterization of HSPB5 protein modulation in murine cardiac cells exposed to a pro-oxidant environment

Ambra Antonioni (*Unit of Biology and Genetics, Department of Movement, Human and Health Sciences, University of Rome "Foro Italico", Rome, Italy*)

Membrane stability of the eye lens as a factor in redox homeostasis

Alexia Kalligeraki (*Department of Biosciences, Durham University, UK*)

13:00-14:00 Lunch and Poster Viewing (Palazzo Bevilacqua)

Symposium VII - Redox Signaling and Therapy in Metabolic Syndrome and Fatty Liver Disease

Chairpersons: **María Monsalve** (*Instituto de Investigaciones Biomédicas "Alberto Sols", Spain*) and **Juan Sastre** (*University of Valencia, Spain*)

14:00-14:30 *Mitochondrial dysfunction in tumor development: from NAFLD to HCC*

María Monsalve (Instituto de Investigaciones Biomédicas "Alberto Sols", Spain)

14:30-15:00 Role of mitochondrial dysfunction and oxysterols in NASH

Gaetano Serviddio (University of Foggia, Italy)

15:00-15:30 Redox modulation of FOXO1 transcription factor and its consequences for metabolism

Lars Oliver Klotz (Friedrich Schiller University, Germany)

SFRR Europe Annual Award Lecture

Chairpersons: **Michael Davies – Corinne Spickett**

11:00-12:00 Oxidative Damage, Proteolysis and Protein Aggregates

Tilman Grune (German Institute of Human Nutrition, Germany)

16:30-17:00 Coffee Break

Symposium IV- ROS in Nervous System Function and Dysfunction

Chairpersons: **Daniel M. Suter (Purdue University, USA) and Christian Gonzalez-Billault (Universidad de Chile, Chile)**

17:00-17:30 Redox biology mechanisms involved in axonal outgrowth

Christian Gonzalez-Billault (Universidad de Chile, Chile)

17:30-18:00 RhoGTPase regulation of redox homeostasis in microglia

João Bettencourt Relvas (University of Porto, Portugal)

18:00-18:30 Actin filaments remodeling via oxidation by MICAL family enzymes

Elena E. Grintsevich (University of California, USA)

18:30-19:00 Closing Remarks