Society for Free Radical Research International

Online Congress
15–18 March 2021

Scientific Program

20th Biennial Meeting of SFRR International

SFRR-I 2021

sfrri2021.com

Society for Free Radical Research International

Agenda Monday
15 March 2021

Scientific Program

Time (CET)	Channel 1	Channel 2
08.45 – 09.00	**Opening Ceremony**	
09.00 – 11.00	**Symposium 1** **Relevance of Oxygen Levels for Stem Cell Redox Biology and Regenerative Medicine** Chairs: Giovanni E. Mann King's British Heart Foundation Centre of Excellence, Faculty of Life Sciences & Medicine, King's College London, London, UK José Viña Freshage Research Group Department of Physiology. University of Valencia, Spain Cellular redox signaling under physiological normoxia and ischemia-reperfusion Giovanni E. Mann King's British Heart Foundation Centre of Excellence, Faculty of Life Sciences & Medicine, King's College London, London, UK Transcriptomic and proteomic characterization of human cardiac progenitor cells Maria J. Sebastião Animal Cell Technology Unit, iBET Instituto de Biologia Experimental e Tecnológica, Portugal Relevance of oxygen concentration in stem cell culture for regenerative medicine Consuelo Borras Freshage Research Group- Department of Physiology, Faculty of Medicine, University of Valencia, Valencia, Spain Do hypoxia mimetic agents' provide fidelity in replication of engineered oxygen control measures in human mesenchymal stem cell isolation and culture? Nicholas R. Forsyth School of Pharmacy and Bioengineering, Keele University	

Break 30 min

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11.30 – 12.30	**Trevor Slater Award Lecture** **A redox-centred view of skeletal muscle responses to exercise and ageing** Malcolm Jackson Institute of Ageing and Chronic Disease, University of Liverpool, UK	
12.30 – 13.30	**Oral Comunications 1**	**Narrated Communications** Discussion Session 1
	Break 1 hour	
14.30 – 16.00	**Narrated Communications** Discussion Session 2	**Narrated Communications** Discussion Session 3
16.00 – 18.00	**Symposium 2** **Precision Redox and Mitochondrial Quality in Aging** Chair: Chang Chen Institute of Biophysics, Chinese Academy of Sciences, Beijing, China Redox-stress response capacity decline and ER reductive stress in aging Chang Chen Institute of Biophysics, Chinese Academy of Sciences, Beijing, China Mitochondrial H2O2: new insights from imaging Vsevolod Belousov Department of Metabolism and Redox Biology, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russia Mitochondrial transport and energy homeostasis in neuronal degeneration and regeneration Zu-Hang Sheng Synaptic Function Section, NINDS, NIH, USA Age and sex determine the effectiveness of redox adaptive homeostasis Kelvin J. A. Davies Leonard Davis School of Gerontology of the Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, USA	**Symposium 3** **Revising Redox Biology: New insights from Selenium** Chairs: Xingen Lei Cornell University, USA Yongping Bao University of East Anglia, UK New functions of selenoproteins: beyond redox reactivity Xingen Lei Cornell University, USA Relative importance of human and mouse selenoproteins Vadim Gladyshev Brigham and Women's Hospital, Harvard Medical School, Boston, USA The molecular underpinnings of selenium in ferroptosis Marcus Conrad Institute of Developmental Genetics, Helmholtz Zentrum München, Germany The selenoprotein thioredoxin reductase 1 (TrxR1, TXNRD1) as a main regulator of growth factor responses Elias Arnér Department of Medical Biochemistry and Biophysics (MBB). Karolinska Institutet, Stockholm, Sweden
18.00 – 18.30	**SFRR-I Executive Committee Meeting**	

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Time (CET)	Channel 1	Channel 2
09.00 – 11.00	**Symposium 4** **Role of Redox-active Metals for the Prevention and Treatment of Cancer in the Era of Precision Medicine** Chairs: Shinya Toyokuni Department of Pathology and Biological Responses, Nagoya University Graduate School of Medicine, Japan Des R. Richardson Pathology and Bosch Institute, University of Sydney, Australasia Role of ferroptosis in carcinogenesis and tumor biology Shinya Toyokuni Department of Pathology and Biological Responses, Nagoya University Graduate School of Medicine, Japan Targeting cellular signalling to inhibit tumour cell metastasis and growth: The iron and NDRG1 connection Des R. Richardson Pathology and Bosch Institute, University of Sydney, Australasia Anticancer platinum and gold compounds with thiol-targeting mechanisms of action Chun-Nam Lok Department of Chemistry and Chemical Biology Center, The University of Hong Kong, Hong Kong Nanochelator of iron for improved iron removal efficacy in various disease models Guangjun Nie National Center for Nanoscience and Technology, China	
Break 30 min		
11.30 – 12.30	**Keynote Lecture I** **A mitochondrial etiology of complex diseases** Douglas Wallace The Center for Mitochondrial and Epigenomic Medicine at Children's Hospital of Philadelphia, Philadelphia, USA	
12.30 – 13.30	**Oral Comunications 2**	**Oral Comunications 3**

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Agenda Tuesday
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Time (CET)	Channel 1	Channel 2
	Break 1 hour	
14.30 – 16.00	**Narrated Communications** Discussion Session 4	**Narrated Communications** Discussion Session 5
16.00 – 18.00	**Symposium 5** **Redox Regulation of the Epigenetic Landscape** Chair: Frederick Domann University of Iowa, USA Epigenetics, the third pillar of nitric oxide signalling Douglas Thomas Pharmaceutical Sciences, University of Illinois at Chicago, USA Redox-dependent regulation of chromatin methylation Alison Brewer Department of Cardiology, King's College London, UK Regulation of labile Fe(II) and further DNA/histone demethylation by cAMP signaling Gaofeng Wang Department of Human Genetics, University of Miami Miller School of Medicine, USA Maternal exposure to a mitochondrial toxicant results in life-long alterations in the epigenetic landscape of the offspring Janine Santos National Institutes of Health, USA	**Symposium 6** **Nutrition and redox signaling** Chairs: Cesar Fraga Fisicoquímica, Facultad de Farmaciay Bioquímica, Universidad de Buenos Aires (UBA); and Instituto de Bioquímicay Medicina Molecular (IBIMOL), UBA-CONICET, Buenos Aires, Argentina. José Viña Freshage Research Group Department of Physiology. University of Valencia, Spain Relevance and bioactivity of flavonoids as regulators of redox signalling Cesar Fraga Fisicoquímica, Facultad de Farmaciay Bioquímica, Universidad de Buenos Aires (UBA); and Instituto de Bioquímicay Medicina Molecular (IBIMOL), UBA-CONICET, Buenos Aires, Argentina. Exercise as an antioxidant supplement to promote healthy ageing and delay frailty José Viña Freshage Research Group Department of Physiology. University of Valencia, Spain Ketogenic diets, nutrient signaling and mitochondria Jon Ramsey Veterinary Medicine Department of Molecular Biosciences, University of California, USA Zinc and redox signaling: impact on brain development and function Patricia Oteiza Departments of Nutrition and of Environmental Toxicology, University of California, Davis, USA

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Time (CET)	Channel 1	Channel 2
09.00 – 11.00	**Symposium 7** **Redox regulation: Thiols, novel roles and novel thiols** Chair: Ivan Gout Department of Structural and Molecular Biology, University College London, UK Ergothioneine, a thiol/thione antioxidant with therapeutic potential Barry Halliwell Office of the Senior Deputy President and Provost, National University of Singapore, Singapore The emerging role of coenzyme A and protein CoAlation in redox regulation Ivan Gout Department of Structural and Molecular Biology, University College London, UK The role of glutathione in bacterial virulence Yunn Hwen Gan Department of Biochemistry, National University of Singapore, Singapore Human peroxiredoxin 3: oxidizing substrate specificity, glutathionylation and other oxidative post-translational modifications Madia Trujillo Departamento de Bioquímica and Centro de Investigaciones Biomédicas, Facultad de Medicina,Universidad de la República, Uruguay	**Symposium 8** **Regulation of Redox Signaling by Nrf2 in Health and Disease** Chair: Young-Joon Surh Tumor Microenvironment Global Core Research Center, Seoul National University, Korea Role of Nrf2-induced reductive stress in stemness Young-Joon Surh Tumor Microenvironment Global Core Research Center, Seoul National University, Korea Cytoprotective function of NRF2 and its role in sulfur metabolism Hozumi Motohashi Department of Gene Expression Regulation, Division of Aging Science, Institute of Development, Aging and Cancer, Tohoku University, Japan The NRF2-KEAP1-ARE signal pathway: Regulation and dual role in cancer Donna D. Zhang Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, USA ROS signalling and Nrf2-mediated adaptive response in type 2 diabetes Jingbo Pi School of Public Health, China Medical University, China
Break 30 min		
11.30 – 12.30	**Keynote Lecture II** **Oxidative eustress and oxidative distress** Helmut Sies Institute for Biochemistry and Molecular Biology I, Heinrich-Heine-University Düsseldorf, Düsseldorf, Germany	
12.30 – 13.30	**Oral Comunications 4**	**Oral Comunications 5**
13.30 – 14.30	**Women in Science Round Table** Lin Mantell, Chang Chen, Carmen Gómez, Ting-Ting Huang, Elizabeth Ledgerwood, Maria Paola Nitti, Patricia Oteiza	

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Time (CET)	Channel 1	Channel 2
14.30 – 16.00	**Narrated Communications** Discussion Session 6	**Narrated Communications** Discussion Session 7
16.00 – 18.00	**Symposium 9** **Redox Regulation of Neurovascular and Neurometabolic Coupling in Brain Aging and Disease: A Unifying View** Chairs: Joao Laranjinha Faculty of Pharmacy and Center for Neurosciences and Cell Biology, University of Coimbra, Coimbra, Portugal Enrique Cadenas University of Southern California, USA Regulation of neurovascular coupling in the brain mediated by nitric oxide: the redox cycle of ascorbate and nitrite Joao Laranjinha Faculty of Pharmacy and Center for Neurosciences and Cell Biology, University of Coimbra, Coimbra, Portugal Calcium-dependent mechanisms of cerebral blood flow regulation Martin Lauritzen Neuroscience, University of Copenhagen, Denmark Redox signaling in brain endothelial cells adapted to physiological normoxia: consequences for ischemia-reperfusion injury Giovanni E. Mann King's British Heart Foundation Centre of Excellence, Faculty of Life Sciences & Medicine, King's College London, London, UK Glutamate-glutamine cycling and the oxidative metabolism rate in astrocytes João Duarte Department of Experimental Medical Science, Lund University, Sweden	**Symposium 10** **Senescence and Senolytics in Ageing and Longevity** Chairs: Richard Siow King's College London, UK Brian Kennedy Departments of Biochemistry and Physiology, Beijing, National University of Singapore, Singapore Sirtuins and mTOR in aging pathways – the role of cell senescence Brian Kennedy Departments of Biochemistry and Physiology, Beijing, National University of Singapore, Singapore Repurposing approved drugs as geroprotectors: Experimental versus epidemiological evidence Michael Ristow Institute of Translational Medicine, Swiss Federal Institute of Technology, Zurich, Switzerland Mitochondrial Metabolism in T Cell Activation and Aging Noga Ron-Harel Faculty of Biology, Technion Israel Institute of Technology, Haifa, Israel Exercise and vascular ageing: endothelial redox regulation by Sirt1 Kun Ling Tsai Department of Physical Therapy, National Cheng Kung University, Taiwan

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Time (CET)	Channel 1	Channel 2
09.00 – 11.00	**Symposium 11** **Oxidative stress and selective mitophagy** Chairs: Quan Chen State Key Laboratory of Medicinal Chemical Biology, College of Life Sciences, Nankai University, Tianjin, China. State Key Laboratory of Membrane Biology, Institute of Zoology, Chinese Academy of Sciences, Beijing, China Molecular regulation of mitochondrial autophagy and cellular fate Quan Chen State Key Laboratory of Medicinal Chemical Biology, College of Life Sciences, Nankai University, Tianjin, China. State Key Laboratory of Membrane Biology, Institute of Zoology, Chinese Academy of Sciences, Beijing, China Oxidative Stress Induced Mitophagy in the Aging Heart Åsa Gustafsson Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, USA The novel function of mitochondrial outer membrane protein Fis1 in mitochondrial dynamics and quality control Yih-Cheng Liou Department of Biological Sciences, National University of Singapore, Singapore Autophagy of mitochondria and their association with the nucleus in mammals Michelangelo Campanella Department of Comparative Biomedical Sciences, The Royal Veterinary College, University of London, UK. Consortium for Mitochondrial Research, University College London, London, UK	
Break 30 min		
11.30 – 12.30	**Keynote Lecture III** **Reflections of an ageing free radical** Barry Halliwell Academic Appointments and Research Excellence, Office of the Senior Deputy President and Provost, National University of Singapore, Singapore	

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Time (CET)	Channel 1	Channel 2
12.30 – 13.30	**Oral Comunications 6**	**Oral Comunications 7**
	Break 1 hour	
14.30 – 16.00	**Lester Packer Award Lecture** **Discovery of the KEAP1-NRF2 pathway regulating cellular response against oxidative and electrophilic stresses** Masayuki Yamamoto Department of Medical Biochemistry, Tohoku University Graduate School of Medicine, Japan	
16.00 – 18.00	**Symposium 12** **Cellular H2O2 gradients and nanodomains in redox signaling** Chair: Helmut Sies Institute for Biochemistry and Molecular Biology I, Heinrich-Heine-University Düsseldorf, Düsseldorf, Germany Peroxiporins in subcellular redox homeostasis and signaling Roberto Sitia Division of Genetics and Cell Biology, Università Vita-Salute San Raffaele, Italy Cellular hydrogen peroxide nanodomains György Hajnoczky MitoCare Center for Mitochondrial Imaging Research and Diagnostics, Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, USA Estimating compartmental hydrogen peroxide steady-state concentrations using experiment and theory Hadley Sikes Massachusetts Institute of Technology, USA Modeling of cellular hydrogen peroxide landscape Fernando Antunes Department of Chemistry and Biochemistry, Faculdade de Ciências, Universidade de Lisboa, Portugal	**Symposium 13** **Detection and quantification of the protein 'modific-ome'** Chairs: Michael Davies Department of Biomedical Sciences, Uniersity of Copenhagen, Denmark Christian Schöneich Department of Pharmaceutical Chemistry, University of Kansas, USA What, where and how much? Key challenges in protein oxidation Michael Davies Department of Biomedical Sciences, Uniersity of Copenhagen, Denmark Modifications of cysteine residues in the generation of structurally and functionally diverse protein species Dolores Perez-Sala Department of Structural and Chemical Biology, Centro de Investigaciones Biológicas, CSIC. Spain Lipid oxidation products induce specific protein modifications: biological effects and analysis by LC-MS/MS Corinne Spickett Biosciences Research Group, Aston University, UK Oxidative protein modifications of protein therapeutics: targeted proteomic analysis and consequences for stability, efficacy and immunogenicity Christian Schöneich Department of Pharmaceutical Chemistry, University of Kansas, USA
18.00 – 18.30	**Awards and Closing ceremony**	

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