



Organizers:
Paulo J Oliveira
(Coimbra, Portugal)
Catarina R Oliveira
(Coimbra, Portugal)



Coimbra, Portugal, 22-24 May 2019



Symposium 1 | Mitochondrial Biology in Health and Disease/MitoPORTO2019

Organizers: Paulo J. Oliveira (Coimbra, Portugal)
Jorge Oliveira (Porto, Portugal)
Carlos Palmeira (Coimbra, Portugal)
Mariusz Wieckowski (Warsaw, Poland)

Day: Wednesday 22 afternoon, Thursday 23 all day and Friday 24 morning
Meeting room: Meeting Room Julieta, Hotel Vila Galé (Congress venue 1)

Wednesday, 22 May

14.00-16.00 Session 1: FOIE-GRAS: Translational Focus on NAFLD & Mitochondria (I) **Joint session with Symposium 4: Nutrition and Hepatology**

Chairs: Paulo Oliveira (Coimbra, Portugal) and Carlos Palmeira (Coimbra, Portugal)

14:00-14:30 **S1-L1 | Non-alcoholic fatty liver disease - from the bedside to the bench**
Piero Portincasa (Bari, Italy)

14:30-15:00 **S1-L2 | Role of mitochondria in de novo lipogenesis and fatty liver disease**
John Jones (Coimbra, Portugal)

15:00-15:30 **S1-L3 | Alterations in the mitochondrial function and proteome in Non-Alcoholic Fatty Liver Disease**
Mariusz Wieckowski (Warsaw, Poland)

15:30-16:00 **S1-L4 | Developmental programming of NAFLD in rodents and primates**
Peter Nathanielsz (Laramie, WY, USA)

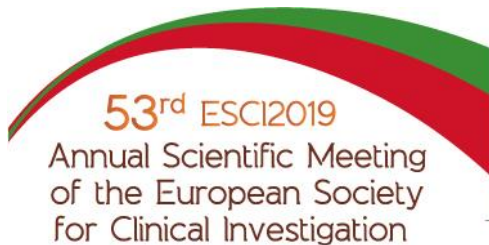
16:00-16:30 Coffee-break

16.30-18.00 Session 2: FOIE-GRAS: Translational Focus on NAFLD & Mitochondria (II) **Joint session with Symposium 4: Nutrition and Hepatology**

Chairs: Piero Portincasa (Bari, Italy) and Mariusz Wieckowski (Warsaw, Poland)

16:30-17:00 **S1-L5 | Mitochondrial ALDH2 modulation in fatty liver preservation**
Joan Rosselo-Catafau (Barcelona, Spain)

17:00-17:15 **S1-O1 | Effects of physical exercise during pregnancy on the modulation of liver mitochondrial function in an animal model of non-alcoholic fatty liver disease**
Jelena Stevanović¹, Jorge Belezá¹, Pedro Coxito¹, Manoel Rios¹, Susana Pereira^{1,2}, Carlos Palmeira², António Moreno^{2,3}, Paulo Oliveira², António Ascensão¹, José Magalhães¹
¹LaMetEx — Laboratory of Metabolism and Exercise, CIAFEL — Research Centre in Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Porto, Portugal, ²CNC — Centre for Neuroscience and Cell Biology, UC-Biotech, University of Coimbra, Coimbra, Portugal, ³Department of Life Sciences, School of Sciences and Technology, University of Coimbra, Coimbra, Portugal



Organizers:
 Paulo J Oliveira
 (Coimbra, Portugal)
 Catarina R Oliveira
 (Coimbra, Portugal)



Coimbra, Portugal, 22-24 May 2019



- 17:15-17:45 **S1-L6 | Hydrogen sulfide and mitochondrial function in Non-Alcoholic Fatty Liver Disease**
 Carina Prip-Buus (Paris, France)
- 17:45-18:00 **S1-O2 | RIP3 Deficiency Remodels Mitochondrial Bioenergetics and Function in Experimental NAFLD**
TAWHIDUL Islam¹, Marta B. Afonso¹, Véronique Lenoir², Rui E. Castro¹, Carina Prip-Buus², Cecília M. P. Rodrigues¹
¹Imed.ulisboa, Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal, ²Institut Cochin, INSERM U1016, CNRS UMR8104, Université Paris Descartes, Paris, France
- 18.00 - 19.00 Opening Ceremony
 19.00 - 20.00 Opening lecture by a Key-note speaker
 20.00 - 21.00 Welcome drink
 21.00 - 22.00 Champions League in Biomedicine and Experimental Biology

Thursday, 23 May

08.30-10.00 **Session 3: Mitochondria in Pathophysiology I**

Chairs: Fabio Di Lisa (Padova, Italy) and Werner Koopman (Nijmegen, The Netherlands)

- 08:30-09:00 **S1-L7 | The involvement of diabetes induced damage to mitochondrial DNA in diabetic complications**
 Afshan Malik (London, UK)
- 09:00-09:15 **S1-O3 | Contributions of Glutaminolysis to CD8⁺ Metabolism in Rheumatoid Arthritis by ¹³C Isotopomer Analysis of Lactate**
Francisco X. Carvalho¹, Bárbara G. Carvalho¹, Hanns-Martin Lorenz², M. Margarida Souto-Carneiro², Rui A. Carvalho^{1,2}
¹Department of Life Sciences, Faculty of Sciences and Technology, University of Coimbra, Coimbra, Portugal, ²Division of Rheumatology, Heidelberg University Hospital, Heidelberg, Germany
- 09:15-09:45 **S1-L8 | Modulation of complex I and promotion of mitochondrial homeostasis**
 Carlos Palmeira (Coimbra, Portugal)
- 09:45-10:00 **S1-O4 | Cardiac mitochondrial function in the offspring of sedentary and exercised mothers with gestational diabetes**
João D. Martins^{1,4}, Susana P. Pereira^{1,2,4}, Óscar M. Rodrigues³, Jorge Beleza², Jelena Stevanovic², David Rizo-Roca², Estela Santos-Alves², Pedro Coxito², Manoel Ríos², António J. Moreno³, José Magalhães², António Ascensão², Paulo J. Oliveira¹
¹CNC — Centre for Neuroscience and Cell Biology, UC-Biotech, University of Coimbra, Coimbra, Portugal, ²CIAFEL — Research Centre in Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Porto, Portugal, ³Department of Life Sciences, School of Sciences and Technology, University of Coimbra, Coimbra, Portugal, ⁴These authors contributed equally to the work
- 10:00-10:30 Coffee-break



Organizers:
Paulo J Oliveira
(Coimbra, Portugal)
Catarina R Oliveira
(Coimbra, Portugal)



Coimbra, Portugal, 22-24 May 2019



10.30-12.30 Session 4: Mitochondria in Pathophysiology II

Chairs: Afshan Malik (London, UK) and John Jones (Coimbra, Portugal)

- 10:30-11:00 **S1-L9 | Functional respiration protects quiescent cells from oxidative stress**
Jakub Rohlena (Prague, Czech Republic)
- 11:00-11:15 **S1-O5 | Mitochondrial Dihydroorotate Dehydrogenase plays an important role in tumor formation**
Ana Coelho¹, Jaromira Kovarova², Martina Bajzikova², Jakub Rohlena², Paulo Oliveira¹, Jiri Neuzil²
¹CNC, Coimbra, Portugal, ²Institute of Biotechnology, Prague, Czech Republic
- 11:15-11:30 **S1-O6 | Amelioration of hepatic mitochondrial dysfunction after sleeve gastrectomy and Roux-en-Y gastric bypass in diet-induced obese rats**
Silvia Ezquerro^{1,5}, Leire Méndez-Giménez^{1,5}, Sara Becerril^{1,5}, Rafael Moncada^{2,5}, Víctor Valentí^{3,5}, Javier Álvarez-Cienfuegos^{3,5}, Victoria Catalán^{1,5}, Javier Gómez-Ambrosi^{1,5}, Gema Frühbeck^{1,4,5}, Amaia Rodriguez^{1,5}
¹Metabolic Research Laboratory, Clínica Universidad de Navarra, idiSNA, Pamplona, Spain
²Department of Anesthesia, Clínica Universidad de Navarra, Pamplona, Spain ³Department of Surgery, Clínica Universidad de Navarra, Pamplona, Spain ⁴Department of Endocrinology & Nutrition, Clínica Universidad de Navarra, Pamplona, Spain ⁵CIBEROBN, Instituto de Salud Carlos III, Madrid, Spain
- 11:30-12:00 **S1-L10 | Mitochondrial dynamics modulates phospholipid metabolism**
Antonio Zorzano (Barcelona, Spain)
- 12:00-12:15 **S1-O7 | Delving the Bone-buried Osteocytes lipid metabolism commitment in post-menopausal osteoporosis**
Ana M. P. Silva^{1,2,3}, Romeu A. Videira⁴, Ana C. Moreira^{3,5,6}, Paulo J. Oliveira¹, Rui A. Carvalho², **Vilma A. Sardao**¹
¹CNC - Center For Neuroscience And Cell Biology, Coimbra, Portugal, ²Department of Life Sciences, University of Coimbra, Coimbra, Portugal, ³Institute for Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal, ⁴REQUIMTE/LAQV, Laboratory of Pharmacognosy, School of Pharmacy, University of Porto, Porto, Portugal, ⁵i3S - Instituto de Investigação e Inovação em Saúde, University of Porto, Porto, Portugal, ⁶IBMC – Instituto de Biologia Molecular e Celular, University of Porto, Porto, Portugal
- 12:15-12:30 **S1-O8 | Altered oligomerization of mitochondrial ATP synthase due to glycative damage increases the vulnerability of aged cardiomyocytes to mitochondrial permeabilization**
Diana Bou-Teen¹, Marisol Ruiz-Meana^{1,2}, Elisabet Miro-Casas^{1,2}, Celia Castans³, Elena Bonzon-Kulichenko³, Ricardo Moure^{1,2}, Jesús Vazquez^{2,3}, David García-Dorado^{1,2}
¹Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain ²Centro de Investigación Biomédica en Red Enfermedades Cardiovasculares (CIBERCV), Madrid, SPAIN, ³Centro Nacional de Investigaciones Cardiovasculares (CNIC), Madrid, Spain
- 12.30-14.00 Poster session 1 and lunch



14.00-16.00 Session 5: MitoPORTO 2019 – Advances in Mitochondrial Research I

Chairs: Jorge Oliveira (Porto, Portugal) and Michael Murphy (Cambridge, UK)

14:00-14:30 S1-L11 | Mitochondrial dysfunction, what is it and how do we measure it?

David Nicholls (Novato, USA & Lund, Sweden)

14:30-14:45 S1-O9 | Targeting mitochondrial dysfunction in Parkinson's Disease

Ria De Haas¹, Lisa Heltzel¹, Julien Beyrath², Jan Smeitink^{1,2}

¹Department of Pediatrics, Radboud Center For Mitochondrial Medicine, Nijmegen, The Netherlands,

²Khondrion BV, Nijmegen, The Netherlands

14:45-15:15 S1-L12 | Targeting mitochondria in Huntington's disease

Jorge Oliveira (Porto, Portugal)

15:15-15:30 S1-O10 | Reversal of mitochondrial abnormalities by CRISPR/Cas9 editing of the mutant HTT allele in vitro in Huntington's Disease patient-derived pluripotent and neural stem cells

Carla Lopes^{1,2}, Thorsten Schlaeger^{3,4}, Luis Pereira de Almeida^{1,5}, George Daley^{3,4,6}, Cristina Rego^{1,7}

¹Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal, ²Institute for Interdisciplinary Research of the University of Coimbra, Coimbra, Portugal, ³Division of

Hematology/Oncology, Boston Children's Hospital and Dana Farber Cancer Institute, Boston, Boston, USA, ⁴Stem Cell Program, Boston Children's Hospital, Boston, USA, ⁵Faculty of Pharmacy, University of Coimbra, Coimbra, Portugal, ⁶Harvard Medical School; Harvard Stem Cell Institute, Boston, USA,

⁷Faculty of Medicine, University of Coimbra, Coimbra, Portugal

15:30-16:00 S1-L13 | Exploring metabolism to induce a paused state in pluripotent cells

Ana Sofia Rodrigues (Coimbra, Portugal)

16:00-16:30 Coffee-break

16.30-18.00 Session 6: MitoPORTO 2019 – Advances in Mitochondrial Research II

Chairs: Joan Rosselo-Catafau (Barcelona, Spain) and David Nicholls (Novato, USA & Lund, Sweden)

16:30-17:00 S1-L14 | Joining the Dots: Epigenetics, Metabolism and the Circadian Clock

Paolo Sassone Corsi (University of California-Irvine, USA)

17:00-17:15 S1-O11 | Mitochondrial Whole Genome Sequencing of Single Cholinergic Neurons Located in the Pedunculopontine Nucleus of Parkinson's disease Post-Mortem Brains to Characterize the Spectrum of Mitochondrial DNA Deletions

Mr. Alex Mcloughlin¹, Angela Pyle², Amy Reeve², Gavin Hudson², Christopher Morris², Joanna Elson², Ilse Pienaar²

¹University Of Sussex, Brighton, United Kingdom, ²Newcastle University, Newcastle, United Kingdom

17:15-17:30 S1-O12 | Measuring mitochondrial DNA content in human blood: observations from studies of two diabetic nephropathy cohorts from the UK and USA

Hannah Rosa¹, Luigi Gnudi², Saima Ajaz¹, Helen Looker³, Robert Nelson³, Afshan Malik¹

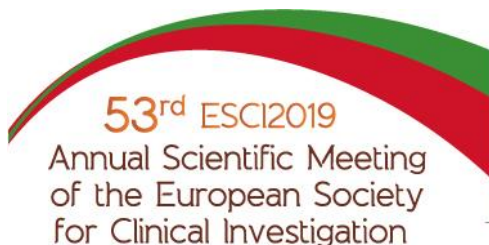
¹Diabetes Research Group, School of Life Course Sciences, King's College London, London, United Kingdom, ²Cardiovascular Division, King's College London, London, United Kingdom, ³Phoenix

Epidemiology and Clinical Research Branch, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Phoenix, USA

17:30-17:45 S1-O13 | The insecticide diazinon induces mitochondrial permeability transition in rat liver mitochondria

Dr. Fábio Erminio Mingatto¹, Camila Araújo Miranda¹, Anilda Rufino de Jesus Santos Guimarães¹

¹Unesp - Fcat, Dracena, Brazil



Organizers:
Paulo J Oliveira
(Coimbra, Portugal)
Catarina R Oliveira
(Coimbra, Portugal)



Coimbra, Portugal, 22-24 May 2019



17:45-18:00 **S1-O14 | Effects of H₂S synthesis modulators at I/R induced MPTP opening in rat heart**
Raisa Fedichkina¹, Yulia Goshovska¹, Vadim Sagach¹
¹Bogomoletz Institute of Physiology NASU, Kyiv, Ukraine

18.00-19.30 Poster session 2
20.30 Congress dinner

Friday, 24 May

08.30-10.00 **Session 7: MitoPORTO 2019 – Advances in Mitochondrial Research III**

Chairs: Antonio Zorzano (Barcelona, Spain) and Hans Zischka (Munich, Germany)

08:30-09:00 **S1-L15 | Mitochondrial metabolites in health and disease**
Michael Murphy (Cambridge, UK)

09:00-09:15 **S1-O15 | Mitochondrial function and huntingtin proteostasis predict striatal vulnerability in Huntington's Disease**
Tânia R. Soares^{1,2}, Brígida R. Pinho¹, Michael R. Duchon^{2,3}, Jorge M. A. Oliveira^{1,3}
¹REQUIMTE/LAQV, Faculty of Pharmacy, University of Porto, Porto, Portugal, ²Dep. Cell and Developmental Biology, University College London, London, UK, ³Consortium for Mitochondrial Research, University College London, London, UK

09:15-09:45 **S1-L16 | Mitochondrial involvement in cardiac injury and protection**
Fabio Di Lisa (Padova, Italy)

09:45-10:00 **S1-O16 | Novel avenues of ischemia/reperfusion injury prevention: lessons from a soluble adenylyl cyclase inhibitor and a SirT3 activator**
João Teodoro^{1,2}, Anabela Rolo^{1,2}, Rui Silva^{1,2,4}, Ivo Machado^{1,2}, Joan Rosello-Catafau⁴, Clemens Steegborn³, Carlos Palmeira^{1,2}
¹Department of Life Sciences of the University of Coimbra, Coimbra, Portugal, ²Center for Neurosciences and Cell Biology of the University of Coimbra, Coimbra, Portugal, ³Department of Biochemistry, University of Bayreuth, Bayreuth, Germany, ⁴Ischemia-Reperfusion Unit, Experimental Pathology Department, Institut d'Investigacions Biomèdiques de Barcelona, Barcelona, Spain

10:00-10:30 Coffee-break

10.30-12.30 **Session 8: Mitochondria in Pathophysiology III**

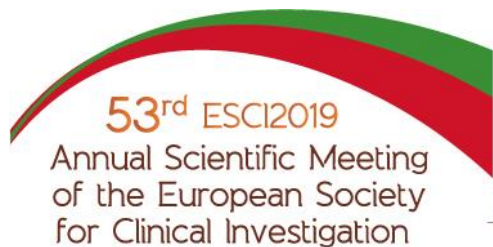
Chairs: Jakub Rohlena (Prague, Czech Republic) and Carina Prip-Bus (Paris, France)

10:30-11:00 **S1-L17 | Exogenous NAD⁺ prevents galactose-induced death of Leigh Syndrome patient fibroblasts with isolated complex I deficiency**
Werner Koopman (Nijmegen, the Netherlands)

11:00-11:30 **S1-L18 | Disruption of mitochondrial metabolism and circadian genes by anthracyclines**
Paulo Oliveira (Coimbra, Portugal)

11:30-11:45 **S1-O17 | A mathematical model of expansion of disadvantaged but altruistic mitochondrial mutants in skeletal muscle fibres**
Ferdinando Insalata¹, Hanne Hoitzing¹, Nick Jones¹
¹Imperial College London, London, United Kingdom

11:45-12:15 **S1-L19 | Targeting liver cancer mitochondria**
Hans Zischka (Munich, Germany)



53rd ESCI2019
Annual Scientific Meeting
of the European Society
for Clinical Investigation

Organizers:
Paulo J Oliveira
(Coimbra, Portugal)
Catarina R Oliveira
(Coimbra, Portugal)



Coimbra, Portugal, 22-24 May 2019



www.esci2019.com

- 12:15-12:30 **S1-O18 | Anti-tumor activity of triphenylphosphonium conjugates of betulinic acid and their effect on ROS level in mitochondria**
Prof. Igor Antipin^{1,2}, Denis Ponomaryov¹, Leisan Grigor'eva¹, Taliya Salikhova¹, Ruba Ali¹, Thin Dang¹, Olga Tsepaeva², Andrey Nemtarev^{1,2}, Timur Abdullin¹, Vladimir Mironov^{1,2}
¹Kazan Federal University, Kazan, Russian Federation, ²Arbuzov Institute of Organic & Physical Chemistry, Kazan, Russian Federation
- 12.30-14.00 Poster session 3 and lunch
14.00-16.40 Multi-focus Plenary & ESCI Awards Session
16.45-17.30 Closing Ceremony