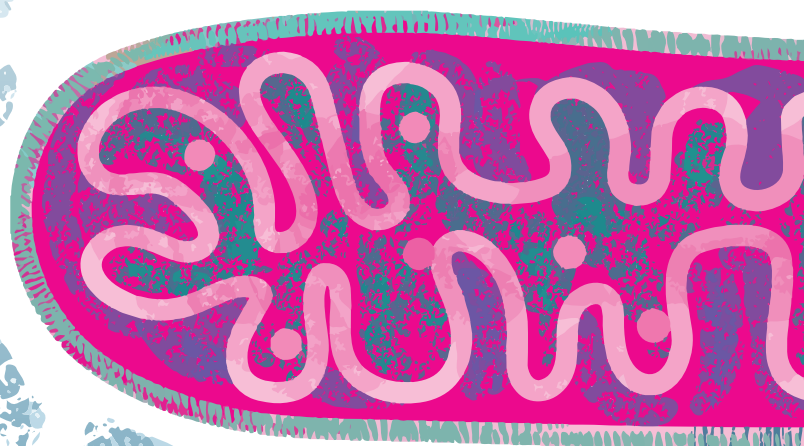


14<sup>th</sup> Conference on Mitochondrial Physiology  
**Mitochondrial function:  
changes during life cycle  
and in noncommunicable diseases**

**COST MitoEAGLE perspectives and  
MitoEAGLE WG and MC Meeting**

**MiP2019/MitoEAGLE**

Belgrade, Serbia, 13-16 October 2019



**PROGRAMME**

## Sunday, October 13

**13:00-15:00** *Registration and lunch*

**15:00-15:30** *Opening ceremony*

### A1 **15:30-17:00** **Session A1 - Mitochondria, lifestyle and life cycle** Chairs: **Nebojsa Lalic, Nina Krako Jakovljevic**

**15:30-15:50** **Erich Gnaiger** (Innsbruck, Austria)

A1-01 OXPHOS capacity in human muscle tissue and body mass index – the MitoEAGLE mission towards an integrative database

**15:50-16:10** **Patrick Schrauwen** (Maastricht, The Netherlands)

A1-02 Circadian rhythmicity of skeletal muscle metabolism: role in metabolic health

**16:10-16:30** **Steven Hand** (Baton Rouge, USA)

A1-03 Mitochondrial function and protection during life cycle arrests

**16:30-16:50** **Etienne Hebert-Chatelain** (New Brunswick, Canada)

A1-04 Mitochondria get stoned by cannabinoid receptors

**16:50-17:00** **Final discussion**

**17:00-17:30** *Coffee/tea break*

### A2 **17:30-19:30** **Session A2 - Mitochondrial dynamics and OXPHOS** Chairs: **Helene Lemieux, Thierry Arnould**

**17:30-17:50** **Aleksandra Trifunovic** (Cologne, Germany)

A2-01 Keeping OXPHOS in shape

**17:50-18:10** **Nicoleta Moiso** (Leicester, United Kingdom)

A2-02 The integrated stress response mediates mitochondria-nucleus communication in neurodegeneration

**18:10-18:30** **John Jones** (Cantanhede, Portugal)

A2-03 Role of mitochondria in altered metabolic fluxes in non-alcoholic fatty liver disease

**18:30-18:50** **Niina Karro** (Tallinn, Estonia)

A2-04 Respiration of permeabilized cardiomyocytes from mice: no sex differences, but substrate-dependent changes in the apparent ADP-affinity

**18:50-19:10** **Maja Misirkic-Marjanovic** (Belgrade, Serbia)

A2-05 Dual role of mitochondrial damage in anticancer and antipsychotic treatment

**19:10-19:30** **Final discussion**

**19:30** *Welcome reception*

# Monday, October 14

## 09:00-11:00 Session B1 - Mitochondria in noncommunicable diseases

**B1**Chairs: **Lisa Chakrabarti, Slawomir Michalak****09:00-09:20 Nebojsa Lalic** (Belgrade, Serbia)

B1-01 Pathophysiology of type 2 diabetes and mitochondrial dysfunction: possible therapeutic implications

**09:20-09:40 Pablo Garcia-Roves** (Barcelona, Spain)

B1-02 Metabolic plasticity in obesity-related type 2 diabetes

**09:40-10:00 Dominik Pesta** (Duesseldorf, Germany)

B1-03 Effects of physical activity and low calorie diet lifestyle interventions on insulin sensitivity in type 2 diabetes

**10:00-10:20 Ivanka Markovic** (Belgrade, Serbia)

B1-04 Targeting energy-sensing pathways as possible neuroprotective strategy in neurodegenerative disorders

**10:20-10:40 Sergej Pirkmajer** (Ljubljana, Slovenia)

B1-05 Effect of antirheumatic drugs on AMPK and mitochondrial respiration in skeletal muscle

**10:40-11:00 Final discussion****11:00-11:30 Coffee/tea break**

## 11:30-13:30 Session B2 - Oxidative stress and mitochondria

**B2**Chairs: **Maria Luisa Genova, Sameh Ali****11:30-11:45 Zuzana Sumbalova** (Bratislava, Slovakia)

B2-01 Platelet mitochondrial function, coenzyme Q10, and oxidative stress in patients with chronic kidney diseases

**11:45-12:00 Helene Lemieux** (Edmonton, Canada)

B2-02 Partial prevention of oxidative stress damage to mitochondria with photobiomodulation

**12:00-12:15 Natalja Timohhina** (Tallinn, Estonia)

B2-03 Metabolic effects of mitochondria-targeted antioxidant peptides in colorectal cancer cells

**12:15-12:30 Ali Sameh** (Cairo, Egypt)

B2-04 Differential Role of Mitochondria in rescuing glycolytically inhibited subpopulation of triple negative breast cancer cells

**12:30-12:45 Andjelka Isakovic** (Belgrade, Serbia)

B2-05 The role of ROS in antileukemic action of ethyl ester compound and corresponding Pt(II) and Pt(IV) complexes

**12:45-13:00 Johnny Stiban** (Ramallah, Palestine)

B2-06 Antitumor effects of microwave intratumor therapy using magnetic ferucarbotran nanoparticles on breast cancer xenografts

## Monday, October 14

**13:00-13:15** **Ksenija Vujacic-Mirski** (Mainz, Germany)  
B2-07 ROS formation involving mitochondrial and NADPH oxidase in various tissues and mitochondria

**13:15-13:30** **Nathan Earl Rainey** (Paris, France)  
B2-08 Mitochondria are not the primary target of curcumin-induced autophagy and apoptosis

**13:30-14:30** *Lunch*

### P **14:30-15:30** **Session P - Posters** Chairs: **Ivanka Markovic, Pierre Blier**

**14:30-14:35** **Carlos Palmeira** (Coimbra, Portugal)  
P-01 Prevention of ischemia/reperfusion injury: effects of a soluble adenylyl cyclase inhibitor LRE1

**14:35-14:40** **Silvana Andric** (Novi Sad, Serbia)  
P-02 Markers of mitochondrial biogenesis, fusion and architecture are disturbed in PBMC from war veterans with posttraumatic stress disorder (PTSD)

**14:40-14:45** **Silvana Andric** (Novi Sad, Serbia)  
P-03 Mitochondrial morphology and mitochondrial biogenesis are altered in Leydig cells from stressed adult rats

**14:45-14:50** **Sava Radovic** (Novi Sad, Serbia)  
P-04 Conditional deletion of insulin and IGF1 receptors in steroidogenic cells changes profile of molecular markers of mitochondrial dynamics in myocardium of prepubertal male, but not female mice

**14:50-14:55** **Sava Radovic** (Novi Sad, Serbia)  
P-05 Conditional deletion of insulin and IGF1 receptors disturbs transcription of the main markers of mitochondrial biogenesis and architecture/fusion in mouse prepubertal steroidogenic cells of testes but not ovaries

**14:55-15:00** **Isidora Starovlah** (Novi Sad, Serbia)  
P-06 Mitochondrial dynamic markers and acrosomal reaction are disturbed in spermatozoa from stressed adult rats

**15:00-15:05** **Isidora Starovlah** (Novi Sad, Serbia)  
P-07 Psychophysiological stress changes transcriptional profile of molecular markers of mitochondrial dynamics in myocardium of adult male rats

**15:05-15:10** **Marija Medar** (Novi Sad, Serbia)  
P-08 Long-term sildenafil treatment improves expression of the main mitochondrial dynamics markers in aged myocardium

## Monday, October 14

- 15:10-15:15** **Dijana Marinkovic** (Novi Sad, Serbia)  
P-09 Aging-related increase of cGMP disrupts mitochondrial homeostasis in Leydig cells
- 15:15-15:20** **Marija Jeremic** (Belgrade, Serbia)  
P-10 Neurotoxic effect of extracellular alpha-synuclein can be alleviated by AMPK and autophagy
- 15:20-15:25** **Mirko Djordjevic** (Belgrade, Serbia)  
P-11 Sex-specific effects of candidate Trojan Female Technique haplotype on viability in pest species *Acanthoscelides obtectus*
- 15:25-15:30** **Gaia Tioli** (Bologna, Italy)  
P-12 Involvement of mitochondrial respiratory supercomplexes in anti-bacterial innate immunity

### 15:45-17:30 **Session B3 - Mitochondrial signaling** Chairs: **Eleonor Aasander Frostner, Steven Hand**

**B3**

- 15:45-16:00** **Etienne Hebert-Chatelain** (New Brunswick, Canada)  
B3-01 Src kinase slows down mitochondrial fission and OXPHOS via phosphorylation of ATP5B
- 16:00-16:15** **Carles Canto** (Lausanne, Switzerland)  
B3-02 Mitochondrial dynamics and cellular metabolism: lessons from mouse models
- 16:15-16:30** **Pierre Blier** (Quebec, Canada)  
B3-03 The secrets of extreme longevity from bivalves
- 16:30-16:45** **Milica Popovic** (Cologne, Germany)  
B3-04 Role of cytochrome c oxidase in biogenesis and maintenance of oxidative phosphorylation machinery
- 16:45-17:00** **Omar Alberto Dominguez-Amorocho** (Sao Paulo, Brazil)  
B3-05 Role of Sirtuin 1/3 in CD4+ T cells activation and differentiation in obese and transplanted animals
- 17:00-17:15** **Caroline Kruse** (Sart Tilman, Belgium)  
B3-06 Peripheral blood mononuclear cells to detect mitochondrial dysfunction in horses: a preliminary study
- 17:15-17:30** **Emmanuelle Vandermeeren** (Rimouski, Canada)  
B3-07 Thermal tolerance, ROS production and heart fatty acids content in salmonids
- 17:30-18:00** *Coffee/tea break*

## Monday, October 14

### **B4** 18:00-20:00 **Session B4 - Mitochondrial function and noncommunicable diseases** Chairs: **Dominique-Marie Votion, John Jones**

- 18:00-18:15** **Mercedes Fernandez-Moreno** (A Coruna, Spain)  
B4-01 Role of mitochondrial DNA from OA patients in cellular apoptosis, senescence and autophagy
- 18:15-18:30** **Claudia Holody** (Edmonton, Canada)  
B4-02 Sex-specific changes in neonatal cardiac mitochondrial function in response to perinatal iron deficiency
- 18:30-18:45** **Nina Krako Jakovljevic** (Belgrade, Serbia)  
B4-03 Lower insulin sensitivity differently affects mitochondrial coupling in liver and muscle cells
- 18:45-19:00** **Jekaterina Aid-Vanakova** (Tallinn, Estonia)  
B4-04 Adaptation of muscle OXPHOS in developing glucose intolerance - Wfs1 mice model
- 19:00-19:15** **Kasja Pavlovic** (Belgrade, Serbia)  
B4-05 Effect of metformin on mitochondria in C2C12 muscle cell line
- 19:15-19:30** **Natasa Kopitar-Jerala** (Ljubljana, Slovenia)  
B4-06 Anti inflammatory role of cystatins and mitochondrial function
- 19:30-19:45** **Alina Maria Betiu** (Timisoara, Romania)  
B4-07 Cell-permeable succinate improves amiodarone-induced mitochondrial complex I and II inhibition in human platelets
- 19:45-20:00** **Luis Crisostomo** (Porto, Portugal)  
B4-08 "Mitogheist" – Is testicular mitochondrial dysfunction a ghost pattern of paternal high-fat diet in mice?
- 20:30** *Dinner*

## Tuesday, October 15

**09:00-10:30** Session WG2 – Muscle tissue  
Chairs: **Nicoleta Moiso**, **Sergej Pirkmajer**

**WG2**

**09:00-09:05** **Pablo Garcia-Roves** (Barcelona, Spain)  
Introduction to WG2

**09:05-09:25** **Carolina Doerrier Velasco** (Innsbruck, Austria)  
WG2-01 Inter-laboratory harmonization of respiratory protocols in permeabilized human muscle fibers

**09:25-09:45** **Beatrice Chabi** (Montpellier Cedex 1, France)  
WG2-02 Permeabilized muscle fibers reference values- mouse soleus study

**09:45-10:00** **Helene Lemieux** (Edmonton, Canada)  
WG2-03 Altered mitochondrial metabolism in the diabetic heart

**10:00-10:15** **Arild Rustan** (Oslo, Norway)  
WG2-04 Does donor sex, age, body mass index, exercise status, or muscle type influence energy metabolism in cultured skeletal muscle cells?

**10:15-10:30** **Discussion**

**10:30-11:00** *Coffee/tea break*

**11:00-12:50** Session WG4 - Blood cells and cultured cells  
Chairs: **Natasa Kopitar-Jerala**, **Marko Vendelin**

**WG4**

**11:00-11:05** **Nicoleta Moiso** (Leicester, United Kingdom)  
Introduction to WG4

**11:05-11:20** **Engy A. Abdel-Rahman** (Cairo, Egypt)  
WG4-01 Mitochondrial respiration in platelets of children with autism spectrum disorder

**11:20-11:35** **Theia Lelcu** (Timisoara, Romania)  
WG4-02 Assessment of platelet respiration in blood malignancies: a pilot study in children and adults

**11:35-11:50** **Vlad Avram** (Timisoara, Romania)  
WG4-03 Cell-permeable succinate bypasses statin-induced decrease in mitochondrial ATP-generating respiration in human platelets

**11:50-12:05** **Zuzana Sumbalova** (Bratislava, Slovakia)  
WG4-04 The decline of mitochondrial respiration in isolated platelets after short-term storage

**12:05-12:20** **Tijana Zujovic** (Belgrade, Serbia)  
WG4-05 Cell membrane permeabilization: digitonine optimization pitfalls

**12:20-12:35** **Luiza Cardoso** (Innsbruck, Austria)  
WG4-06 Glucose concentration in culture media does not affect Huh7 cell viability measured by respirometry or digitonin concentration required for plasma membrane permeabilization

**12:35-12:50** **Discussion**

**12:50-14:00** *Lunch*

## Tuesday, October 15

### WG3 14:00-15:20 Session WG3 - Fat, neuronal and liver tissues Chairs: Pablo Garcia-Roves, Zuzana Sumbalova

- 14:00-14:05** **Barbara Cannon** (Stockholm, Sweden)  
Introduction to WG3
- 14:05-14:20** **Norma Dahdah** (Barcelona, Spain)  
WG3-01 Approaches to assess mitochondrial respiration in white adipose tissue
- 14:20-14:35** **Thierry Arnould** (Namur, Belgium)  
WG3-02 Role of Sirtuin 3 in the differentiation of 3T3-L1 preadipocytes
- 14:35-14:50** **Tran Quang Don** (Yuseong-gu Daejeon, Republic of Korea)  
WG3-03 Alterations of mitochondrial morphology and function by MSC4 in macrophage induce the lipolysis activity in adipocyte
- 14:50-15:05** **Lisa Chakrabarti** (Nottingham, United Kingdom)  
WG3-04 Levels of eicosanoids and cytokines reveal sex differences in cerebellar mitochondria in Parkinson's disease and controls
- 15:05-15:20** **Discussion**
- 15:20-15:50** *Coffee/tea break*

### WG1 15:50-16:50 Session WG1 - SOPs and user requirement document (URD): protocols - terminology - reporting Chairs: Dominik Pesta, Tuuli Kaambre

- 15:50-16:20** **Erich Gnaiger** (Innsbruck, Austria)  
WG1-01 Introduction to WG1 & Mitochondrial respiratory states and rates
- 16:20-16:50** **Discussion**
- 18:00-20:00** *Sightseeing in Belgrade*
- 20:00** *Dinner*



## Wednesday, October 16

**09:00-10:20** **WG1-4 - Discussion and Future Perspectives**  
Chairs: **Carolina Doerrier, Erich Gnaiger**

**WG**

**09:00-09:20** WG1

**09:20-09:40** WG2

**09:40-10:00** WG3

**10:00-10:20** WG4

**10:20-11:00** *Coffee/tea break*

**11:00-12:30** **WG1-4 - Working in Groups**

**WG**

**11:00-12:30** Participants meet at tables with their working group to discuss further steps in their projects

**12:30-13:30** *Lunch*

**13:30-15:00** **MC Meeting**

**MC**

**13:30-13:40** **Erich Gnaiger** (Innsbruck, Austria)  
Verification of presence, approval of minutes (Jurmala)

**13:40-14:00** **Erich Gnaiger** (Innsbruck, Austria)  
Update on member status, GP4 budget

**14:00-14:15** **Tomaz Mars** (Ljubljana, Slovenia)  
Implementation of COST policies on: gender balance, ECI, ITC

**14:15-14:45** **Erich Gnaiger** (Innsbruck, Austria)  
Progress of action and plans

**14:45-15:00** **Erich Gnaiger** (Innsbruck, Austria)  
Voting, announcement of location for the next meeting, summary of MC decisions, closing

**15:00** *Departure*

