

## Subject | Minutes of the 12th Conference on Mitochondrial Physiology The role of mitochondria in lifestyle and metabolic syndrome - COST MitoEAGLE perspectives MIP2017

Minutes prepared by Zuzana Sumbalova and Verena Laner

### I. MITOEAGLE welcoming: 2017 November 14

#### Conference venue

Charles University, Faculty of Medicine in Hradec Králové,  
Šimkova 870, Hradec Králové, Czech Republic  
**17:00 – 19:00** Registration  
**19:00** Welcome reception

### II. MITOEAGLE conference: 2017 November 15

#### 1. Welcome to participants

**08:00 – 16:00** Registration

**09:00 – 09:15** Opening and welcome by the conference organizers

The participants were welcomed by Dr. Zuzana Cervinkova (Local Organiser) and the Dean of Faculty of Medicine in Hradec Králové prof. Miroslav Červinka.

#### 2. Participants

see Annex 1 – Attendance list

- Total: 102 COST participants (day 1: 97 - day 2: 102 - day 3: 97 – day 4:64)
- 360 total signed

### Topic A: Metabolic syndrome

#### 3. Session A1: Symptoms, etiopathogenesis, and mitochondrial function

Chair: Červinková Zuzana, Hoppel Charles L

09:15 – 9:45 **Lee Hong Kyu** invited speaker: [Functional difference of mitochondrial genome and its association with phenotypes of metabolic syndrome](#)

09:45 - 10:15 **Periasamy Muthu** invited speaker: Targeting skeletal muscle energetics to control obesity and diabetes

10:15 - 10:30 **Kučera Otto**: Commonly used models of non-alcoholic fatty liver disease (NAFLD)

10:30 - 10:45 **Petit Patrice**: Barth syndrome: cardiolipin alterations linked to tafazzin mutations leads to apoptosis and mitophagy inhibition

10:45 - 11:00 **Kovalčíková Jana**: Mitochondrial protein TMEM70: key role in the biogenesis of ATP synthase verified in a mouse knockout model

11:00 - 11:30 Coffee break MiP2017 Nov 14-17



## Research and education in mitochondrial physiology

Chairs: Lemieux H  l  ne, Drahota Zdenek

11:30 - 12:00 **Hoppel Charles** *invited speaker*: [Pathways of mitochondrial fatty acid oxidation](#)

## 4. Session A2: Alterations of mitochondrial respiration in metabolic syndrome

Chair:   sander Frostner Eleonor

12:15 - 12:30 **Lemieux H  l  ne**: Compounding effects of age and sexual dimorphism on cardiac mitochondrial function in type 2 diabetes

12:30 - 12:45 **Nemec Michal**: Three-month exercise modulates functional state of muscle mitochondria in patients with mild cognitive impairment

12:45 – 13:45 Lunch

13:45-14:45 **Poster session 1**

1. **Metabolic syndrome differentially impacts the retina and underlying retinal pigment epithelium cells.** Han Ted, Sauve Y, Lemieux H.

2. **Mitochondrial function of peripheral blood mononuclear cells (PBMCs) in subjects with metabolic syndrome.** Keppner Gloria-Maria, Rennekamp R, Hauner, Skurk T, Klingenspor M.

3. **Different molecular composition of Lysimachia species result in distinct metabolism.** Toth A, Lener V, Riethmuller E, Kery A, Kolonics A.

4. **Porcine sepsis and associated myocardial depression.** Markova Michaela, Jarkovska D, Horak J, Nalos L, Benes J, AL-Obeidallah M, Svirgerova J, Kuncova J, Matejovic M, Stengl M.

5. **Novel method to study the role of adenylate kinase network in health and disease.** Klepinin Aleksandr, Ounpuu L, Guzun R, Chekulayev V, Timohhina N, Tepp K, Shevchuk I, Schlattner U, Kaambre T.

6. **Impairment of platelet mitochondrial respiration in metabolic syndrome: A pilot study.** Muntean Danina M, Petruş A, Raţiu C, Ionică M, Duicu O, Lighezan R

7. **The early adaptation of rat liver mitochondria to high fat diet.** Noţi  kov   Kateřina, Ku  era O, Sobotka O, Staňkov   P, Endlicher R, Banni A,   ervinkov   Z

8. **Age-related changes in isolated mitochondria from rat liver.** Endlicher Ren  , Drahota Z, Staňkov   P, Ku  era O,   ervinkov   Z

9. **Dietary and pharmacological anti-obesogenic treatments improve myocardial metabolism in diet-induced obese mice** Jansen Kirsten

10. **Mitochondrial membrane permeability transition pore: function and regulation** Zden  k Drahota

## Special lecture: Honorary member of the MiPsociety

Chair: Calabria Elisa, Watala Cezary

14:45-15:00 **  ervinkov   Zuzana**: RNDr. Zdenek Drahota, D.Sc. - [jubilant](#)

Prof. E. Gnaiger as a Chair of MiPsociety congratulated RNDr. Zdenek Drahota for his D.Sc. jubileum and in this occasion Dr. Zdenek Drahota was announced as the fourth 'Honorary Member of the MiPsociety'.

## 5. Session A3: Tissue-specific mitochondrial manifestations of metabolic syndrome

Chairs: Tepp Kersti, Meszaros Andras

15:00 - 15:30 **Garcia-Roves Pablo Miguel** *invited speaker*: Assessing metabolic plasticity in diet-induced obese mice upon lifestyle intervention: an integrative approach.

15:30 - 15:45 **Makrecka-Kuka Marina**: Heart, brain and kidneys: who will survive? Tissue-specific changes in mitochondrial function in the experimental model of endotoxemia

15:45 - 16:00 **Shabalina Irina:** In UCP1-ablated mice, prolonged cold exposure promotes mitochondrial dysfunction, apoptosis and inflammation in brown adipose tissue, and accumulation of visceral obesogenic fat

16:00 - 16:15 **Sobotka Ondřej:** Metabolic changes in rat liver mitochondria during the development of liver steatosis

16:15 - 16:30 **Labieniec-Watala Magdalena:** [Lack of the effect of low metformin concentrations on the response of breast cancer cell mitochondria to radiotherapy under conditions of in vitro experimental hyperglycemia](#)

16:30 - 17:00 Coffee break

Research and education in mitochondrial physiology  
*Chair: Veliká Beáta*

17:15 – 18:15 Gnaiger Erich Protonmotive force and chemiosmotic pressure: a generalization of non-ohmic flux control of the proton leak

## 6. General topics

*Chairs: Marina Makrecka-Kuka, Nemeč Michal*

18:15 - 18:40 **Oral presentations: Selected abstracts and poster flashes**

Presented posters:

- **(WG4):** [Cell-permeable succinate and malonate as research tools](#). Åsander Frostner Eleonor, Ehinger JK, Piel S, Karlsson M, Chamkha I, Sjövall F, Moss SJ, Webster LR, Hansson MJ, Elmér E
- **Different molecular composition of Lysimachia species result in distinct metabolism.** Toth A, Lener V, Riethmuller E, Kery A, Kolonics A.

19:30 – 22:00 **Social program: Dinner in traditional Czech restaurant Na Hraděc**

## III. MITOEAGLE conference: 2017 November 16

### Topic B: Lifestyle

#### 1. Session B1: Mitochondrial function in exercise and lifestyle

*Chairs: Muntean Danina M, Ben-Shachar Dorit*

09:00–09:30 **Coen Paul** *invited speaker:* Impact of calorie restriction and exercise on mitochondrial metabolism in obesity

09:30 – 10:00 **Irving Brian** *invited speaker:* Impact of acute exercise on PBMC respiratory function and methodological considerations

10:00 – 10:15 **Løvsletten Nils:** Increased glucose and fatty acid metabolism and metabolic flexibility in myotubes from trained subjects

10:15 – 10:30 **Renner Kathrin –Sattler:** D-2-hydroxyglutarate interferes with HIF-1 $\alpha$  stability skewing T-cell metabolism towards oxidative phosphorylation and impairing Th17 polarization

10:30 – 10:45 **Sumbalová Zuzana:** The effect of lifestyle on respiration of peripheral blood mononuclear cells and platelets

10:45 – 11:15 Coffee break

#### 2. Session B2: Mitochondrial metabolism in health and disease

*Chairs: Renner-Sattler Kathrin, Coen Paul M*

11:15 – 11:50 **Palmeira Carlos** *invited speaker*: Metabolic diseases and mitochondrial remodeling  
11:50 – 12:10 **Villena Josep**: PGC-1 co-activators mediate calorie restriction-induced mitochondrial biogenesis in white adipose tissue: implications on glucose homeostasis  
12:10 – 12:30 **Efimova Iuliia**: Purification and subunit composition analysis in models of mammalian ATP synthase deficiencies  
12:30 – 12:45 **Alán Lukáš**: Role of MLQ protein in the structure and function of mammalian F1FO ATP-synthase

• **Tuuli Kaambre** invited participants to attend the meeting in Tallin, Estonia: MITOEST 2018, 24-25 April 2018 (<https://kbfi.ee/mitoest/>)

13:00 – 14:00 Lunch

14:00 – 15:00 **Poster session 2**

1. **Cellular phosphotransfer networks as a target of bioenergetic research – methods of oxygraphic study.** Puurand Marju, Tepp K, Klepinin A, Kaambre T.
2. **Pleiotropic effects of biguanides on mitochondrial reactive oxygen species production.** Brazdova Andrea, Pecinova A, Drahota Z, Kovalcikova J, Kovarova N, Pecina P, Alan L, Zima M, Houstek J, Mracek T.
3. **The role of dietary fibers in the energy metabolism of human colon cancer cells.** Ounpuu Ljudmila, Klepinin A, Kaambre T.
4. **COX4-1/COX4-2 cell knock-out/knock-in models for study of cytochrome c oxidase regulation.** Pajuelo Reguera David, Čunátová K, Houštěk J, Mráček T, Pecina P.
5. **Mitochondrial ATP synthase disorders investigated by quantitative proteomics of CRISPR-Cas9 knockout cell lines.** Vrbacký Marek, Kovalčíková J, Pecina Petr, Harant K, Pecinová A, Houštěk J, Mráček T.
6. **Targeting tumor cell proliferation by inhibition of mitochondrial metabolic pathways.** Pecinová Alena, Brázdová A, Kovalčíková J, Drahota Z, Zima M, Alán L, Pecina P, Houštěk J, and Mráček T.
7. **Bioenergetic comparison of human colorectal and breast cancer clinical patients.** Truu L, Koit A, Chekulayev V, Tepp K, Puurand M, Ounpuu L, Klepinin A, Shevchuk I, Kaambre T.
9. **Leptin role in Sertoli cells mitochondria – a novel mechanism with possible implications in the male reproductive potential of obese individuals.** Moreira Bruno P, Martins AD, Monteiro MP, Sousa M, Oliveira PF, Alves MG.

### 3. Special lecture sponsored by HPST

*Chairs: Komlódi Tímea, Sławomir Michalak*

15:00 – 15:50 **Jakub Rohlena** Reactivation of dihydroorotate dehydrogenase by respiration restores tumor growth of mtDNA-depleted cancer cells

## Topic C: MitoEAGLE Working Group Meeting: selected topics

### 4. Session C: Mitochondrial function in exercise and lifestyle

*Chair: Shabalina Irina G, Karabatsiakis Alexander*

- 15:50 – 16:00 **Crisóstomo Luís**: Glycerol metabolism and mitochondrial function in human Sertoli cells - a preliminary study
- 16:00 – 16:10 **Doerrier Carolina**: Effects of warm ischemia on cardiac mitochondria to detect specific targets by High-Resolution Fluorescence Respirometry (HRFR)
- 16:10 – 16:20 **Garcia-Souza Luiz F**: Short-term adaptation to high altitude does not affect respiration of peripheral blood mononuclear cells and platelets
- 16:20 – 16:30 **Veliká Beáta**: The cryopreserved peripheral blood mononuclear cells as a model in functional mitochondrial diagnosis
- 16:30 – 16:40 **Karabatsiakis Alexander**: [The involvement of mitochondria in chronic low-grade inflammation associated with maltreatment experiences in childhood](#)
- 16:40 - 16:50 **Siewiera Karolina**: Changes in blood platelet and brain mitochondrial respiration during short and long-lasting STZ-induced diabetes

16:50 – 17:00 **Komlódi Tímea:** H<sub>2</sub>O<sub>2</sub> production in brain and heart mitochondria: does O<sub>2</sub> concentration matter?

17:00 – 17:10 **Mészáros András:** Mitochondrial oxygen kinetics as a sensitive diagnostic tool to determine apparent cytochrome c oxidase excess capacity

17:10 – 17:20 **Čunátová Kristýna:** COX4-1/4-2 knock-out causes total cytochrome c oxidase deficiency and partial impairment of mitochondrial proteosynthesis

17:20 – 17:40 Coffee break MiP2017

## 5. General topics

17:40 – 18:30 **Oral presentations of selected abstracts and poster awards**

17:40 – 17:55 **Iyer Shilpa:** Bioenergetic profiling of patient derived human fibroblasts for mitochondrial diseases : Edited version

17:55 – 18:10 **Calabria Elisa:** Age and frailty related changes in PBMCs mitochondrial function and whole body physiology

18:10 – 18:30 **Poster awards committee:** Pablo Garcia-Roves, Elisa Calabria, Luís Crisóstomo, Karolina Siewiera

- **Luís Crisóstomo** announced 4 awarded posters, two from each poster session (PS) (the posters for WG meetings were not included in the evaluations). The authors received the diplomas with the award:

**#6. PS2: Andrea Brázdová:** Targeting tumor cell proliferation by inhibition of mitochondrial metabolic pathways

**#3. PS2: Ljudmila Ounpuu:** The role of dietary fibers in the energy metabolism of human colon cancer cells

**#9. PS1: Kirsten M.Jansen:** Dietary and pharmacological anti-obesogenic treatments improve myocardial metabolism in diet-induced obese mice

**#1. PS1: Ted Han:** Metabolic syndrome differentially impacts the retina and underlying retinal pigment epithelium cells

**The award:** No conference fee apply for the awarded participants for the next MiPconference/MITOEAGLE in Latvia in the frame of COST Action MitoEAGLE

19:30 – 23:30 **Social program: Theatre performance and Gala dinner in the Drak Theatre**

## IV. MITOEAGLE conference: 2017 November 17

### MitoEAGLE Working Group Meetings

09:00 – 10:30 **WG1: SOPs and user requirement document: Protocols – Terminology – Reporting**  
*Chairs: Renner-Sattler Kathrin, Mészáros András*

1. **MitoEAGLE preprint 2017-11-01(14).** The protonmotive force and respiratory control: Building blocks of mitochondrial physiology Part 1. - Presented by E. Gnaiger  
[http://www.mitoeagle.org/index.php/MitoEAGLE\\_preprint\\_2017-09-21](http://www.mitoeagle.org/index.php/MitoEAGLE_preprint_2017-09-21)

Discussion points to be considered in the manuscript:

- UCP1 is from the family of proton carrier (J Needergaard)

- The term loosely coupled (Tab. 2) is used in another context (J Needergaard) – should be replaced by term partially coupled
- Purity of mitochondria for normalization: Should yield be reported?
- C Hoppel: mitochondrial yield is 70-80%
- T Mracek: not only mt yield but perhaps also bacteria toxin?
- E Gnaiger stated reference: Rasmussen and Rasmussen 1997
- Table 6: normalization of flux
- Mt markers should be carefully defined – suggestion to leave it for next paper (Patrice Petit); Jan Needergaard – mt markers should be included and discussed in current paper
- Choice of the journal: BBA would be the first choice
- C Hoppel: split paper into two parts
- Co-author contributions: those participants who are not yet listed as a co-author are invited to join; a list was circulated where everybody could add his name.

10:30 – 11:00 Coffee break

## 2. 11:00 – 12:30 WG2: MitoEAGLE data repository on muscle tissues

*Chairs: Votion Dominique, Garcia-Roves Pablo Miguel*

### 1. **Coen Paul M, Distefano G, Doerrier C, Pesta D, Larsen S, Garcia-Roves PM** Human skeletal muscle mitochondrial function: A proposal for a state-of-the-art literature review

Discussion about the content and approach for the critical review.

P. Petit: should mutant animals be included?

D. Votion: include SUIT protocols

C. Hoppel: critical review, suggested journal: Physiological reviews

### 2. **Doerrier Carolina, Distefano G, Coen P, Goodpaster B, Gnaiger E** Upper limit of OXPHOS capacity in permeabilized myofibers: effect of oxygen, ADP and blebbistatin in MiR05Cr and Buffer Z

### 3. **Steen Larsen** The effect on respiratory capacity using different respiration buffers

Discussion about:

- the differences in respiration in different media
- next steps to achieve consensus for media used for respiration in WG2

### 4. **Rustan Arild C** How far are cultured human myotubes from home?

### 5. **Garcia-Roves Pablo M, Chabi B, Cortade F, Doerrier C, Dubouchaud H, Gama-Perez P, Grefte S, Irving B, Moreno S, Ost M, Pesta D** Mitochondrial respirometry reference values from permeabilized mouse soleus muscle fibers. MitoEAGLE WG2 pilot study

Discussion about:

- the reasons for high variability of the respiratory fluxes collected by WG2 in recent coordinated measurements
- Next steps: in new grant period joint workshop (retreat) for respiration of human skeletal muscle should take place in Copenhagen, where experts and young scientists will work together on standardization of procedures in respiration of skeletal muscle, evaluation and normalization. In Innsbruck a workshop for standardization of methods in mouse skeletal muscle and other tissues from mouse can take place. The following persons showed interest to join the workshop: Paul Coen, Pablo Garcia-Roves, Carolina Doerrier, Brian Irving, Marina Makrecka-Kuka, Steen Larsen, Terje Larsen, Oana Duicu, Kirsten Jansen, Pauke Schots, Zuzana Sumbalova
- Discussion about financing the collaborative research – E. Gnaiger announced that Oroboros will support these workshops and other collaborative initiatives by chemicals and media



- A fibre preparation video will be recorded.
- Suggested date for Copenhagen WG2 study on human skeletal muscle: beginning of August; ethics approval according to Steen Larsen not a problem

5. **Larsen Terje** Repository for storage of cardiac muscle respirometry data in MitoEAGLE format.

- **Laszlo Tretter** invited participants to attend meeting in Budapest, Hungary: EBEC 2018, 25-30.8. 2018 (<http://www.ebec2018.hu/index.php/Home>)

6. **Poster: Kinetics of inhibition of energy metabolism pathways by propofol in human skeletal muscle homogenates.** Urban Tomáš, Krajčová A, Kunčický P, Bukovský J, Waldauf P, Džupa V, Drahotka Z, and Duška F.

12:30 – 14:00 Lunch

3. **14:00 – 15:30 WG3: MitoEAGLE data repository on fat, neuronal and liver tissues**

*Chairs: Staňková Pavla, Nedergaard Jan*

1. **Bergman Oded, Karry Rachel, Ben-Shachar Dorit** Impaired homeostasis of mitochondrial complex I in schizophrenia: a possible link to NDUFV2 pseudogene

2. **Nedergaard Jan, Shabalina IG, Cannon B** Creatine effect in mitochondria from different tissues

3. **Staňková Pavla, Endlicher R, Kučera O, Červinková Z** Isolation of rat liver mitochondria for bioenergetic studies

4. **Muntané Jordi, González R, Ranguelova K, Cuadrado A, Padillo FJ, Rodríguez-Hernández MA** The endoplasmic reticulum stress is the driving signaling promoting cell death in a context of reduced oxidative/nitrosative stress during treatment of liver cancer cells with Sorafenib

5. **Poster: Pecina P, Nůsková H, Kovalčíková J, Zídek V, Landa V, Kaplanová V, Kolář F, Papoušek F, Sedmera D, Kazdová L, Bardová K, Flachs P, Tauchmannová K, Drahotka Z, Kopecký J, Pravenec M, Houšťek J and Mráček T** Knockout of DAPIT, an accessory subunit of mitochondrial ATP synthase, causes right ventricular hypertrophy and pulmonary hypertension

15:30 – 16:00 Coffee break

4. **16:00 – 17:30 WG4: MitoEAGLE data repository for blood cells and cultured cells**

*Chairs: Moiso Nicoleta, Crisostomo Luis*

1. **Michalak Sławomir, Rybacka-Mossakowska J, Osztynowicz K, Biernacka – Lukanty J, Tokarz – Kupczyk E, Kozubski W** The effect of anticoagulants on mitochondrial respiration in intact peripheral blood mononuclear cells

2. **Calabria Elisa, de Jong V, Tarperi C, Schena F** PBMCS purification and mitochondrial function assay: monitoring preparative steps and comparison of protocols

3. **Sumbalová Z, Garcia-Souza LF, Veliká B, Menz V, Gatterer H, Burtscher M, Gnaiger E** Purity of blood cells fractions in respirometric studies: peripheral blood mononuclear cells and platelets. Discussion about isolation media and anticoagulants: K. Renner-Sattler DPBS without Ca<sup>2+</sup> is not good for lymphocytes. C. Watala: activation of platelets should be prevented and monitored.

**4. Temelie Mihaela, Diana Iulia Savu, Nicoleta Moiso** Mitochondria-nucleus communication. Linking Parkinson's related mitochondrial dysfunction with DNA damage signaling

**5. Pieroni Luisa, Alberio T, Ronci M, Roncada P, Urbani A, Fasano M**, the Italian mt-HPP Consortium  
Toward the standardization of mitochondrial proteomics: the Italian mitochondrial Human Proteome Project Initiative

**6. Richard K. Porter** Database with view to writing a review of cellular oxygen consumption of intact cells as a useful index of cellular metabolism: comparing and contrasting primary, cell lines and stem cells

- L. Garcia suggested to include blood cells into the review – he would contribute by data collected from the literature for PBMCs
- B. Irving: How to handle various stages during cell differentiation – will be included in the review? Answer R Porter: The data should be collected and when there is an interest the decision should/can be made about what information can included in which publication

*Posters were discussed during coffee and lunch breaks:*

**7. Poster: A new cell culture models of urothelial carcinoma links mitochondrial physiology to multidrug resistance.** Kripnerová M, Marková M, Hatina J, Kuncová J.

**8. Poster: Mitochondrial respiration in intact peripheral blood mononuclear cells in multiple sclerosis patients.** Rybacka–Mossakowska J, Slawomir Michalak, Osztynowicz K, Biernacka–Lukanty J, Tokarz–Kupczyk E, Kozubski W.

**9. Poster: Cell-permeable succinate and malonate as research tools** Åsander Frostner Eleonor, Ehinger JK, Piel S, Karlsson M, Chamkha I, Sjövall F, Moss SJ, Webster LR, Hansson MJ, Elmér E

## V. MC Meeting, November 18

Start: 09:10 – 10:30 **Management Committee Meeting**

1. Welcome to participants

- E. Gnaiger – Chair of the Action welcomed participants and thanked the local organizers for the organization of the successful meeting, then Marija Beno was leading through meeting.
- Explanational words by the Chair of the Action on the budget.

2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum

- 23 COST countries from 31 countries were present at the MC meeting,
- 28 MC/MC-Sub in total: 20/55 MC, 8/40 MC-Sub  
50% ITC, 50% non ITC  
39% Male, 61% Female
- Present: AT, CZ, EE, DE, IL, IT, LT, LV, NO, PL, PT, RO, SI, SK, ES, SE, TR, UK, BE, NL, IE, USA (no voting right)
- Not present: EG, HR, FI, FR, GR, HU, RS, CH, MT, DK
- Therefore two-thirds were present and all votings can and will be accepted.

3. Adoption of agenda – no adoption of the agenda required.

4. Approval of minutes and matters arising of last meeting



- Minutes from the WG meeting in Obergurgl were shown by M. Beno and approved by the MC members.
- The retreat topic, which was in the MC minutes was discussed during the meeting in Hradec Kralove. MCs agreed on a WG4 workshop on blood cells, which should be held at end of January in Innsbruck.

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[http://www.mitoeagle.org/index.php/MITOEAGLE\\_Barcelona\\_2017#Minutes\\_MITOEAGLE\\_Barcelona\\_2017](http://www.mitoeagle.org/index.php/MITOEAGLE_Barcelona_2017#Minutes_MITOEAGLE_Barcelona_2017)

## 5. Update from the Action Chair

a) Status of Action: start 2016-09-12, end of Action: 2020-09-11, participating COST countries, participating NNC/IPC institutions and Specific Organisations:

- Start and end [dates](#) of Action: 2016-11-01 – 2020-09-11
- [Participating Countries](#) registered on e-COST:
- **34 COST countries:** AT, BE, CH, CZ, DE, DK, EL, EE, ES, FI, FR, HR, IE, IL, IT, LT, LV, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR, UK
- **3 NNC:** EG, PS, SA
- **4 IPC/Specific Organisation:** US, JP, KR, QA

**Additional Countries** in our e-mail list but did not register on e-COST: AU, BR, CA, CN, CU, GH, IN, IR, MY, NZ, RU, SG, TU, TW, UG, UY, ZA

b) [Short Term Scientific Missions \(STSM\)](#):

- Review of completed reports by Magdalena Labieniec-Watala:



STSM\_summary\_M.L  
labieniec-Watala.pdf

Planning of next STSMs:

- We will suggest the same structure of the budget for STSM in GP3.  
MC members approved this decision  
Agreed: 28, disagreed: 0
- STSM should be more focused to target specific goals in MoU, devoted to direct manuscript-oriented tasks – also for manuscript writing
- E. Gnaiger suggested to devote 50-70% of the budget for STSM to complete specific WG tasks towards a manuscript (e.g. workshop for standardization of the procedures in human skeletal muscle WG2+WG1: Copenhagen 2018, where experiments will be performed, discussed and summarized). Participants will be mainly invited to apply for STSM to join such a workshop. 30-50% of the STSM budget will be still available for training activities  
MC members approved this decision  
Agreed: 26, disagreed: 2

6. Update from the Grant Holder: Action budget status

- Action budget status presented by Maria Beno

COST Networking Tool	WBP	Used	Difference	ITC
<b>Meetings</b>	€ 64,826.83	<b>€ 19,045.20</b>	€ 45,781.63	€ 8753.19
<b>Training School</b>	€ 29,182.78	<b>€ 29,182.79</b>	- € 0.01	€ 6,191.00
<b>STSM</b>	€ 35,000.00	<b>€ 7,685.00</b>	€ 27,315.00	€ 3,885.00
<b>ITC Conference Grant</b>	€ 11,909.70	<b>€ 0.00</b>	€ 11,909.70	€ 0.00
<b>Dissemination</b>	€ 2,097.59	<b>€ 295.93</b>	€ 1,801.66	€ 0.00
<b>OERSA</b>	€ 500.00	<b>€ 0.00</b>	€ 500.00	€ 0.00
<b>Total Science Expenditure</b>	€ 143,516.90	<b>56,208.92</b>	87,307.98	18,829.19
<b>FSAC (15%)</b>	€ 21,527.54			
<b>Total Grant</b>	€ 165,044.44			

- The column “Difference” shows the available budget and is therefore the current status of what can still be used. As two eligible participants did not come to the meeting there was a voting that the remaining money from the conference in Hradec Kralove will be used for STSMs candidates who will be supported to participate at the retreat and WG4 blood cells workshop.
- Additional budget in the COST Action – the ITC conference grant:  
There is still 4,789.70€ that can be used for ITC Grants. The suggestion is to send 4 to 5 ECIs/PhD students to the mitochondrial conference in Israel in February 2018: Emerging Concepts in Mitochondrial Biology 2018, Rehovot IL (<http://www.weizmann.ac.il/conferences/Mitochondria2018/>).

Interested participants for this Grant are: O. Arandarcikaite, Oana Duicu, L. Crisostomo, Bruno Moreira, Rui Gonzalo Silva

- Approx. amount: 1,200 EUR/person if 4 ECIs are supported  
MC members approved this decision.  
Agreed: 28, disagreed: 0
- Remaining money from OERSA and from Website Dissemination can be used to cover the expenses which occurred for the MitoEAGLe preprint.
- The Work and Budget plan for GP3 was discussed. The Budget will be made on the basis of the GP2 WBP.

#### 7. Update from the COST:

- Marija Beno informed about changes in the Vademecum  
Uploaded on the MitoEAGLE webpage :  
[http://www.mitoglobal.org/images/d/de/COSTVademecum\\_neu\\_2017.pdf](http://www.mitoglobal.org/images/d/de/COSTVademecum_neu_2017.pdf)

#### 8. Monitoring of the Action:

- The Action is monitored in detail on the website (<http://www.bioblast.at/index.php/MitoEAGLE>)
- Meeting minutes are available on the website for each meeting on the page of the meeting.
- Summary of WG progress for each WG could be found in minutes from each meeting.
- Each WG has its own page on MitoEAGLE website, where the progress of the Action is listed – the WG page should be organized better to find easily current tasks and suggested protocols: The summaries of WG meetings should be added to the page of each WG under Next steps.

9. Implementation of COST policies on:

a) Promotion of gender balance and Early Career Investigators (ECI)

- **Gender:** balanced and will be furthermore maintained in all MitoEAGLE events
- **ECI:** ECIs in leadership positions has increased. 3 horizontal leadership positions are ECIs
  1. ECIs, ITCs and gender balance Coordinator: Nina Krako (RS);
  2. ECIs, ITCs and gender balance Substitute: Tomaz Mars (SI)
  3. Dissemination coordinator: Marina Makrecka-Kuka is ECI from ITC (LV)
- Currently approx. 12% of all Action members are ECIs – information of many participants still missing.
- We need to list ECI for the overview, therefore everyone who is PhD until 8 years after the PhD defense should be listed as ECI – the participants were asked to give this information to Marija Beno for updating the column ECI in the list of members, which can be found on the website: ([http://www.mitoeagle.org/index.php/MitoEAGLE\\_network](http://www.mitoeagle.org/index.php/MitoEAGLE_network))
- Plans to increase the involvement of ECIs and to maintain and monitor gender balance:
  1. Encourage: Consider ECIs and gender balance in their nominations as new MC Members.
  2. Support MC members to rotate in exchange of ECIs and to consider gender balance in replacement nominations.
- Question on maternity leave by K. Renner-Sattler: maternity leave years are not included in the time after PhD defence for ECI.
- Suggestion to send a circular to all participants again and stress out more to let us know if they fulfill the criteria for ECI.

b) Inclusiveness and Excellence (see below list of Inclusiveness Target Countries)

- Leadership roles in CA15203 = 38% ITC
  - 3 ITC in WGs (Marko Vendelin, Vilma Borutaite, Zuzana Cervinkova)
  - 5 ITC in other horizontal roles like STSM (Magda Labieniec-Watala), ECIs, ITCs and gender balance (Nina and Tomaz), Training schools (Ayse Basak Engin) and Disseminations (Marina Makrecka-Kuka)
- 6 possible ITC countries not yet involved in the MitoEAGLE project: Bosnia-Herzegovina, Bulgaria, Cyprus, Luxembourg, Montenegro, the former Yugoslav Republic of Macedonia.
- Increase networking in order to involve the 6 remaining ITCs.
- Action participants are asked to establish this cooperation with institutes if they know any of them
  - A. Karabatsiakis: Cyprus
  - K. Renner-Sattler
  - N. Moiso: Bosnia
 Emails will be sent in CC to [mitoeagle@i-med.ac.at](mailto:mitoeagle@i-med.ac.at)

10:30 – 11:00 Coffee break

11:00 – 12:30 **Management Committee Meeting**

10. Follow-up of MoU objectives:

- [MoU objectives](#) and grant period goals presented by Zuzana Sumbalova:



MoU\_Objectives\_GP  
goals\_ZS\_HK2017.pc

- ✓ Goal 1
  - ✓ Goal 2
  - ✓ Goal 3
- If we have reached a goal it should be ticked. The presentation from Zuzana does not show this in the presented form
  - We should think of writing joint grant applications – maybe within Horizon 2020? N. Moiso, J. Muntean
  - We need more active participants registered through COST system: participants were asked to register also in the COST system for better overview of our Action
  - An overview of the registration process to join the COST MitoEAGLE Action was given by M. Beno
- The list of potential mentors should be updated on the website:  
([http://www.mitoeagle.org/index.php/MitoEAGLE\\_network](http://www.mitoeagle.org/index.php/MitoEAGLE_network))
  - The list of host institutions for STSM should be updated on the website and sorted alphabetically:  
([http://www.mitoeagle.org/index.php/Short-Term\\_Scientific\\_Missions\\_MITOEAGLE](http://www.mitoeagle.org/index.php/Short-Term_Scientific_Missions_MITOEAGLE))
  - The participants were asked to contact M. Beno for adding their name to mentor list and their institution to the list of host institutions
  - To GAPG4: E. Gnaiger presented the strategy with the software for data recording. Available SUIT protocols for DatLab7 could be uploaded from the MitoPedia. Users can change concentrations in uploaded files. For a new SUIT protocol the users should contact Oroboros. In order to support the visibility of the action, the idea is: if the protocol will be shared within the community, the creation of this specific protocol by Oroboros is for free. E. Gnaiger will apply for a grant for the development of software for data collection for data repository.
  - Retreat planned at the beginning of February 2018 in Innsbruck. It should be associated with a workshop on blood cells – the final date will be announced.
  - The remaining money could be used for this retreat. In the workshop we can use cryopreserved PBMC or include also the isolation procedure. WG1 Proficiency test should be run by each participant before the real workshop on a specific tissue or cell line/fraction – applicable for each retreat workshop.

**The progress report of the working groups was reported by the WG leaders:**

Mag. Dr. Kathrin Renner-Sattler (WG1)  
PhD. Pablo Miguel Garcia-Roves (WG2)  
Dr. Jan Nedergaard and (WG3)  
Dr. Elisa Calabria (WG4 blood cells)  
Dr. Nicoleta Moiso (WG4 cell lines)

## MitoEAGLE Working Group 1

- [WG1 summary](#) presented by Kathrin Renner-Salter:



WG1\_summary\_HK2017.pdf

- [Proficiency test](#) presented by Andras Meszaros:



WG1\_Proficiency test\_HK2017.pdf

- [Dissemination](#) presented by Marina Makrecka-Kuka:



WG1\_Dissemination\_HK2017.pdf

## MitoEAGLE Working Group 2



WG2\_summary\_HK2017.pdf

- **WG2 summary** presented by Pablo Garcia-Roves:  
[http://www.mitophysiology.org/images/a/ad/Garcia\\_WG2.pdf](http://www.mitophysiology.org/images/a/ad/Garcia_WG2.pdf) (discuss where to place on Wiki)
  - Plan of 2 joint experiments: human skeletal muscle in Denmark, mouse skeletal muscle in Innsbruck. Goal is to identify the reason for high variability between labs and set a standard.
  - Additional experiments planned between February-March, more laboratories are invited to join the work and start to prepare the manuscript
  - T. Larsen and M. Makrecka-Kuka – plan joint work on heart, need more participants to join the work. Started search in the literature. The question was if the review should be extend for different diseases?
  - A. Rustan will work on a review on cultured human myotubes as a model
  - E. Gnaiger: Grant proposal submitted for Horizon 2020 towards legislative certification in diagnostic and research laboratories.

## MitoEAGLE Working Group 3

- **WG3 summary** presented by Jan Needegrad:
  - Good progress shown in WG3 in Hradec Kralove: adipose tissue and liver tissue (Pavla Stankova compared isolation methods and buffers and will proceed with methodological work. The expenses can be covered by a new grant received by the group of Z. Cervinkova).
  - Odeta Arandarcikaite will send a template for collecting data from neuronal tissue.

### **Further discussed:**

- Suggested protocols for specific tissues will be added by E. Gnaiger and listed on the website under SUIT protocol database ([http://www.bioblast.at/index.php/MitoPedia:\\_SUIT](http://www.bioblast.at/index.php/MitoPedia:_SUIT))
- In the WG page under next steps, the summary from the WG meetings should be found. Suggested protocol for data comparison with additional information for data collection will be added for each WG.

## MitoEAGLE Working Group 4

- [WG4 blood cells summary](#) presented by Elisa Calabria:



WG4\_blood  
cells\_sum\_HK2017.pdf

- We should start collecting data from different laboratories for methods comparison

- [WG4 cell lines summary](#) presented by Nicoletta Moisi:



WG4\_cell  
lines\_sum\_HK2017.pdf

- WG4 has to start with data collection. Suggestion to use the same cell line and passage number for data comparison

### 11. Scientific planning:

#### a) Scientific strategy (MoU objectives, GP2 goals, WG tasks and deliverables)

Next WG tasks are listed in WG summaries (see above)

#### b) Action Budget Planning: Work and Budget Plan Summary:

We will keep the same structure for the budget plan as for the GP2.  
Votes: agreed 28, disagreed: 0.

#### c) Long-term planning (including anticipated locations and dates of future activities)

- MiP2018/MitoEAGLE Meeting in September-October 2018 in Latvia will be organized by Marina Makrecka-Kuka, the dates and place will be announced soon
- MiPschool 2018 school will be organized by Terje Larsen on a boat – the final date will be coordinated with Marina Makrecka-Kuka to avoid overlapping with the meeting
- Workshop in Copenhagen in August with the topic: WG 1 and 2 human skeletal muscle workshop and retreat

#### d) Dissemination plan (Publications and outreach activities):

- COST Action should be acknowledged in our publications. The example how to acknowledge is in the preprint terminology publication.
- Publications with authors from at least three COST countries will count as a contribution to the Cost Action MitoEAGLE. We need to list all such publications for final report.
- We need to list and document all outreach activities presenting our COST Action MitoEAGLE: seminars, meetings. Participants were asked to send the documentation about their outreach activities, photos are welcome for documentation. Everything will be listed on MitoEAGLE website.

### 12. New members of the COST Action MITOEAGLE:



a) COST countries

b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations:

- 6 COST countries are not yet members of our COST Action MitoEAGLE

there was no request to join our Action

- the participants were asked to contact (with E.Gnaiger in CC) the collaborators from the COST countries, will contact Contacts which are not members of our Action yet, to join MitoEAGLE: personal contacts in Cyprus
- information about procedure for joining COST Action MitoEAGLE was explained and will be summarized by M. Beno on the website : <http://www.mitoglobal.org/index.php/MitoEAGLE>

### 13. Any Other Business (AOB)

Discussion points:

- Melanie Schartner will replace Zuzana Sumbalova for the position of Scientific Representative in next grant period, as ZS will leave the Medical University of Innsbruck and the position is associated with Grant Holder (MUI).

### 14. Location and date of next MC meeting

- MC Meeting in Riga, LV in autumn 2018 – date to be announced
- MC Meeting in Belgrade, Serbia in autumn 2019 – date to be announced

### 15. Summary of MC decisions:

MC members voted for these points:

1. The remaining money from the conference in Hradec Kralove will be used for additional STSM candidates  
Agreed: 28, disagreed: 0
2. The remaining money from the events in Hradec Kralove are shifted to the costs for the Workshop – WG 4 blood cells workshop  
MC members approved this decision.  
Agreed 28, disagreed: 0.
3. 4 to 5 ECI will be chosen to participate on the mitochondrial conference in Israel in February with the remaining 4800€ ITC budget: Emerging Concepts in Mitochondrial Biology 2018, Rehovot IL (<http://www.weizmann.ac.il/conferences/Mitochondria2018/>).  
MC members approved this decision.  
Agreed: 28, disagreed: 0
4. The remaining money from dissemination will be devoted for printing the preprint terminology publication (printed for the participants of WG meeting in Hradec Kralove)  
MC members approved this decision.  
Agreed 28, disagreed: 0.
5. The same structure for the budget plan as for the GP2 will be proposed.  
MC members approved this decision.  
Agreed 28, disagreed: 0.
6. Devote 50-70% of the budget for STSM to specific WG tasks, this will apply for the next Grant Period – workshop for standardization of the procedures in human skeletal muscle WG2+WG1: Copenhagen 2018  
MC members approved this decision.  
Agreed 26, disagreed: 2.

16. Closing: The meeting was closed by the Chair Erich Gnaiger and local organizer Zuzana Cervinkova at 12:35

## LIST OF ANNEXES AND LINKS

### Annex 1 – Attendance List



Attendance  
list-signed.pdf

### Links:

Abstracts, presentations and agenda:

[http://www.mitoeagle.org/index.php/MiP2017/MitoEAGLE\\_Hradec\\_Kralove\\_CZ](http://www.mitoeagle.org/index.php/MiP2017/MitoEAGLE_Hradec_Kralove_CZ)