MITOEAGLE data repository in muscle

TG2.1 Skeletal
TG leaders: Garcia-Roves Pablo M ES / Votion Dominique-Marie BE / Coen Paul M US
TG participants: Boyle John P UK, Chabi Beatrice FR, Garcia-Roves Pablo M ES, Lehti Maarit FI, Mars Tomaz SI, Pirkmajer Sergej SI, Rustan Arild NO, Schlattner Uwe FR, Wuest Rob C NL and many others

TG2.2 Cardiac
TG leaders: Larsen Terje S NO / Makrecka-Kuka Marina LV
TG participants: Muntean Danina M RO, Schlattner Uwe FR, Vendelin Marko EE, Wuest Rob C NL
Summary of the discussion about ...

→ Proposal for a state-of-the-art literature review

- Leader of the project: Paul Coen
- Topic: human skeletal muscle mitochondrial function
- Cf. revue from Erich (2009) → extensive literature since the last ten years
- Of interest for further researchers but...
  - Definition of “quality control criteria” for data to be included in the review (or distinction of data according on whether the data meets these inclusion criteria or not)
  - To be included (or additional paper(s))
    - Description of protocols (that include quality controls: Cyt c, O₂, T°...) according to objectives of the study
    - Cultured muscle cells (myoblast, myotubes)
      Leader of this chapter (or paper): Arild Rustan
  - Targeted journal “Physiological review” (contact the editor)
Summary of the discussion about ...

→ different types of media

How to get robust conclusion since other factors may influence results?

→ Proposal for two joint experiments

• 1. with experts in the field of human skeletal muscle
  ➢ In Denmark
• 2. with experts in the field of mouse skeletal muscle
  ➢ In Innsbruck

NB:
+ researchers from Inclusiveness Target Countries

Date: after April 2018 (2nd grant period)
Summary of the discussion about ...

→ MitoEAGLE WG2 pilot study

Aim: Implementation of a reference protocol as a tool for instrumental and technical quality control in muscle tissues

→ Collection of data (Permeabilized fibers (pfi) - soleus)

Mouse model
• Mouse strain: C57BL6 J - Age: 14-20 weeks
• Gender: male (N=4) and female (N=4), total N=8
• SUIT protocol: 1PM;2D;2c;3G;4S;5U;6Ama

→ Quick analysis of data
  ➢ Variability among groups (Flux)
  ➢ Same FRC

→ How to improve the protocol to reduce the variability?
  ➢ Additional labs
  ➢ Factors: Ww, mechanical permeabilisation (video, picture)
  ➢ Supply of chemicals to participating labs
Summary of the discussion about …

→ cardiac muscle respirometry data in MitoEAGLE format

→ Search of the literature
  ➢ Data according to different diseases
  ➢ Several studies in clinical journals: often lack of robust description of the methodology
  ➢ Probably not one paper to be written but several ones according to the condition and preparations

→ Working team extended
Thank you Zuzana for the great organisation