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**COST MC Chair: Prof Erich Gnaiger, erich.gnaiger@i-med.ac.at**

**COST STSM Reference Number: COST-STSM-CA15203-35709**

**Period: 2017-01-09 to 2017-02-20**

**COST Action: CA15203**

**STSM type: Regular (from Spain to Austria)**

**STSM Applicant: Ms Marisol Fernández Ortiz, Biomedical Research Center, Armilla (Granada) (ES),  
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**STSM Topic: Harmonization of respirometric protocols comparing isolated mitochondria and permeabilized muscle fibers**

**Host: Erich Gnaiger, Medical University of Innsbruck, Innsbruck (AT), erich.gnaiger@i-med.ac.at**

**Budget Request: Year-2017**

Travel	500 Euro
Subsistence (hotel/meals)	2000 Euro
Total	2500 Euro

**Short CV:**

I obtained the Degree in Biochemistry from the University of Granada (2014) and I studied the Master of Molecular Biology applied to Biotechnology Companies (BioEnterprise) at the same university (2015). I passed this Master's degree with Honors, presenting my Master's Thesis entitled 'Search for new natural products from microbial sources with activity against melanoma'. This research was conducted in Excellence Research Foundation Center of Innovative Drugs in Andalusia (MEDINA Foundation), which is located in the Technological Park of Health of Granada, (Andalusia, Spain).

I have also worked with the Research Group 'Biomembranes CTS-236' in the Department of Biochemistry and Molecular Biology I of the University of Granada, where I was offered a Contract of Practice (2014) and granted with a Fellowship of Introduction to Research (2015) within the Project of Excellence entitled 'Development and evaluation of new antitumor alkylphospholipids that modify intracellular cholesterol homeostasis'. The results were presented at several Spanish national conferences.

Since 2016, I belong to the Research Group 'CTS-101: Intercellular Communication' as a predoctoral student under the supervision of Dr Dario Acuña Castroviejo. My PhD is focused on the study of the mechanism of sarcopenia during aging and the relationship between chronodisruption, melatonin deficit, innate immunity and mitochondrial failure in skeletal and myocardial muscle during aging in mice. This research is partly supported by a FPU fellowship that I was granted from Spanish Ministry of Economy and Competitiveness.

**Work Plan Summary:**

The Short-Term Scientific Mission MITOEGLE is expected to have a duration of six weeks, specifically from January 9th, 2017 to February 20th, 2017. The work plan will be carried out according to MitoFit Coaching Days Innsbruck which are offered in the OROBOROS MitoFit Laboratory. It can be summarized as follows:

-Week 1 (from January 9th, 2017 to January 15th, 2017)- MitoFit Coaching Days-Basic:

It provides a fundamental introduction to high-resolution respirometry with the O2k-Core, instrumental assembly and technical service, the DatLab software, oxygen sensor calibration, oxygen flux analysis of respirometry experiments with substrate-uncoupler-inhibitor (SUIT) protocols.

-Weeks 2 and 3 (from January 16th, 2017 to January 29th, 2017)- MitoFit Coaching Days-Proficiency test:

It provides training on high-resolution respirometry at a basic and advanced level, guiding through standard operating procedures at the instrumental and experimental level on mitochondrial respiratory function in intact and permeabilized muscle fibers.



·Weeks 4 and 5 (from January 30th, 2017 to February 12th, 2017)- MitoFit Coaching Days- O2k Multisensor:

It provides advanced training on O2k-Fluorometry for measurement of mt-membrane potential, H<sub>2</sub>O<sub>2</sub> production, phosphorylation of ADP to ATP, and O2k-potentiometric measurement of mt-membrane potential with TPP+. O2k-MultiSensor protocols and applications are always performed in combination with respirometry.

·Week 6 (from February 13th, 2017 to February 20th, 2017)- Analysis of results

Experimental results, reporting, and interpretation of SUIT protocols will be discussed. We will evaluate skeletal/cardiac muscle mitochondrial bioenergetics, comparing respirometric data in isolated mitochondria versus intact muscle fibers.

This work plan is expected to provide training for quality control in high-resolution respirometry, aimed at standardization of SUIT protocols and fostering proficiency to generate experimental data of assured high quality as required for a data base on mitochondrial physiology.

I request the approval of a COST Short Term Scientific Mission as described above

Applicant:

Ms Marisol Fernández Ortiz

30 Oct 2016