EXPRESSION OF INTEREST

Adherence to the COST action

Date: 05/10/2016

Dra. **Consuelo Borrás Blasco** declares her interest in be part of the Acción COST "Mitochondrial mapping: Evolution-Age-Gender-Lifestyle-Environment (MITOEAGLE) CA15203".

Describe briefly why you are interested in this COST action, highlighting what would be your contribution and your expectations.

To the **COST action CA15203** I can offer my expertise in: 1) gender-associated differences in mitochondrial oxidant production; 2) age-associated changes in mitochondria; 3) Alzheimer's and mitochondrial alterations, including differences between genders; 4) In November we are going to acquire a Seahorse XFe96 Analyzer, which is very useful to determine mitochondrial associated parameters in cells and tissues. Some related articles I have published are: ***1.*** *Models for preclinical studies in aging-related disorders: One is not for all. Transl Med UniSa. 2016 Jan 31;13:4-12;* ***2.*** *Early, but not late onset estrogen replacement therapy prevents oxidative stress and metabolic alterations caused by ovariectomy. Antioxid Redox Signal. 2014 Jan 10;20(2):236-46;* ***3.*** *Mitochondria as sources and targets of damage in cellular aging. Clin Chem Lab Med. 2012 Feb 1;50(8):1287-95;* ***4.*** *Mitochondrial complex I impairment in leukocytes from type 2 diabetic patients. Free Radic Biol Med. 2011 May 15;50(10):1215-21;* ***5.*** *Mitochondrial DNA sequences are present inside nuclear DNA in rat tissues and increase with age. Mitochondrion. 2010 Aug;10(5):479-86;* ***6.*** *Direct antioxidant and protective effect of estradiol on isolated mitochondria. Biochim Biophys Acta. 2010 Jan;1802(1):205-11;* ***7.*** *Mitochondrial biogenesis in exercise and in ageing. Adv Drug Deliv Rev. 2009 Nov 30;61(14):1369-74;* ***8.*** *Low in vivo brain glucose consumption and high oxidative stress in accelerated aging. FEBS Lett. 2009 Jul 7;583(13):2287-93;* ***9.*** *Oestradiol or genistein rescues neurons from amyloid beta-induced cell death by inhibiting activation of p38. Aging Cell. 2008 Jan;7(1):112-8;* ***10.*** *Effect of gender on mitochondrial toxicity of Alzheimer's Abeta peptide. Antioxid Redox Signal. 2007 Oct;9(10):1677-90;* ***11.*** *Delayed ageing through damage protection by the Arf/p53 pathway. Nature. 2007 Jul 19;448(7151):375-9.* ***12.*** *Dietary soy isoflavone induced increases in antioxidant and eNOS gene expression lead to improved endothelial function and reduced blood pressure in vivo. FASEB J. 2005 Oct;19(12):1755-7;* ***13.*** *17beta-oestradiol up-regulates longevity-related, antioxidant enzyme expression via the ERK1 and ERK2[MAPK]/NFkappaB cascade. Aging Cell. 2005 Jun;4(3):113-8;* ***14.*** *Ursodeoxycholic acid protects against secondary biliary cirrhosis in rats by preventing mitochondrial oxidative stress. Hepatology. 2004 Mar;39(3):711-20;* ***15.*** *Mitochondrial theory of aging: importance to explain why females live longer than males. Antioxid Redox Signal. 2003 Oct;5(5):549-56;* ***16.*** *Mitochondria from females exhibit higher antioxidant gene expression and lower oxidative damage than males. Free Radic Biol Med. 2003 Mar 1;34(5):546-52;* ***17.****. Human exceptional longevity: Transcriptome from centenarians is distinct from septuagenarians and reveals a role of Bcl-xL in successful aging. Aging US, 2016. In press.*

Given the above, I declare my interest to become a member of the Management Committee and I confirm to be aware of all obligations associated with it.

Brief resume

Lecturer in Physiology (Faculty of Medicine, University of Valencia) I studied Pharmacy at the University of Valencia, where I graduated in 1999. In 2003 I obtained my European PhD degree in the Department of Physiology (Faculty of Medicine, University of Valencia) with a thesis entitled "Importance of mitochondrial oxidative stress on the different longevity between males and females". The main finding was the role of oestrogens against mitochondrial oxidative stress, and therefore in the extension of longevity (Free Radic Biol Med. 2003; 34(5):546-52). During my PhD student period, I did a pre-doctoral stay in London at The Centre for Cardiovascular Biology and Medicine in King's College, where I studied with an expert in cardiovascular research and cell signalling, Prof Giovanni E. Mann, the effect of soya administration in mitochondrial antioxidant enzyme levels in aorta and liver from rats (FASEB J. 2005; 19(12):1755-7). I also studied how glutathione is able to modulate telomerase activity, to modify cell cycle related protein expression, and to alter the normal rhythm of cell proliferation (J Biol Chem. 2004; 279(33):34332-59. Continuing on with this topic, I went to the Centro Nacional de Investigaciones Oncológicas in Madrid, and did a post-doctoral stay with a specialist in telomerase and telomeres, María A. Blasco. I was also interested to study new genes related to longevity and we published, in collaboration with Dr Manuel Serrano's and Dr Maria Blasco's groups, that p53 and telomerase can extend longevity in mice (Nature. 2007; 448(7151):375-9; Cell. 2008; 135(4):609-22). In 2005, I moved back to Valencia and took up the position of lecturer at the Catholic University of Valencia, and in 2008 I came back to the University of Valencia as an assistant professor. In 2011, I attained a position as a lecturer in the Department of Physiology of the Faculty of Medicine (University of Valencia). At present, I am interested in the factors that confer extreme longevity to centenarians, and we have already found that they are exceptionally well-regulated at the mRNA level by microRNAs (Sci Rep. 2012; 2:961). Very recently, we have found that Bcl-Xl, a mitochondrial-related protein is involved in the extraordinary longevity of centenarians (Aging US, 2016 in press). My second interest is the study of stem cells, including the role of mitochondria) as a useful tool for regenerating aged tissues (Stem Cell Reports. 2014;3(4):566-73). My H-index is 29.

Signed:

Dra. **Consuelo Borrás Blasco**

05/10/2016