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European Society for Clinical Investigation

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Officers and members of the ESCI Council 2021

Objectives

The objectives of the Society are the advancement of medical practice through science; the cultivation of clinical research by the methods of the natural sciences; the correlation of science with the art of medical practice; the fostering of high standards of ethical practice and investigation; and the diffusion of a spirit of fraternity and international co-operation among and through its members.

Membership

Any person who has been actively involved in medical research in Europe, for example by involvement in original investigations in clinical or allied sciences of medicine, can apply for membership of ESCI. Members will receive the EJCI monthly. Any company, corporation, organisation, or trust can apply for corporate membership in the Society.

Meetings

The Society holds one Annual Scientific Meeting each year, usually in April/May. Meetings are held in different cities in Europe. Other Society's activities include the sponsorship of Workshops and Postgraduate Courses and the encouragement of the exchange of Scientists between Laboratories.

Contact information ESCI

Enquiries regarding membership of the Society or any of its activities should be addressed to:
European Society for Clinical Investigation
ESCI Central Office,
Bolognalaan 34,
3584 CJ Utrecht,
The Netherlands.
Tel: +31 88 755 8787
esci@umcutrecht.nl
www.esci.eu.com

Conclusions: Structural and functional alterations occur in microsomes, mitochondria, and MAM fractions in AD cellular model. In this way, these results allow not only to clarify the pathophysiology of AD but may also be useful to devise a treatment aimed at restoring the normal MAMs function rather than dealing with the plaques and tangles accumulation, which are considered to be downstream consequences of alteration on MAM function and ER-mitochondrial connectivity.

55ASM-0122 ST | Mitochondria as a diagnostic marker between schizophrenia and bipolar disorder. Role of the interactome

I. Menéndez Valle[1,2]; B. Julio[3,4,5]; J.C. Bermejo Millo[1,2,6]; E. Antuña[1,2]; Y. Potes[1,2,6]; I. Vega Naredo[1,2,6]; B. Caballero[1,2,6]; P. García-Portilla[3,4,5]; A. Coto Montes[1,2,6]

[1]University of Oviedo, Cellular Morphology and Biology, Oviedo, Spain; [2]Instituto de Investigación Sanitaria del Principado de Asturias ISPA, Cellular Response to Oxidative Stress, Oviedo, Spain; [3]University of Oviedo, Medicine/Psychiatry Area, Oviedo, Spain; [4]Instituto de Neurociencias del Principado de Asturias INEUROPA, Research in Psychiatry, Oviedo, Spain; [5]Instituto de Investigación Sanitaria del Principado de Asturias ISPA, Research in Psychiatry, Oviedo, Spain; [6]Instituto de Neurociencias del Principado de Asturias INEUROPA, Cellular Response to Oxidative Stress, Oviedo, Spain

Background: Schizophrenia and bipolar disorder, with a prevalence of about 1% in the general population, have a prominent role among mental illnesses. The clinical and prognostic implications of the misdiagnosis rates between schizophrenic (SCH) and bipolar (BD) disorders and, consequently, the introduction of non-specific treatments force researchers to look for valid and reliable objective markers potentially useful to differentiate these disorders from the onset of the disease. Being the interactome the set of relationships that molecules establish within a cell, our intention was to describe differential interactomes between schizophrenia and bipolarity in peripheral blood mononuclear cells. These different molecules provide us with diagnostic discrimination markers. Thus, based on the symptomatology of both diseases, the discrepancy in their energetic capacity seemed plausible, we started the study at the mitochondrial level.

Materials and Methods: Peripheral blood mononuclear cells for mitochondrial characterization were isolated from 50 individuals without significant differences in gender. 22 SCH, 14 BD and the rest (14) healthy control individuals.

Results: The results showed a higher expression of mitochondrial complexes, higher mitochondrial dynamics and higher ATP production in schizophrenic individuals compared to bipolar ones.

Conclusions: These different results obtained strongly support the possibility that mitochondrial functionality could be considered as a robust marker and reinforce the biological diagnostic importance to assist in the categorical discrimination among mental disorders.

J.C.B-M is a FISS pre-doctoral fellow (FI18/00149), J B and P G-P are members of "Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM)"

55ASM-0132 ST | Manipulation of glucose availability promotes different in vitro redox environments in human dermal fibroblasts

S. Pinho[1,2,3]; C. Costa[1,2]; I. Miranda-Santos[1,2]; S.L. Pinho[1,2]; P.J. Oliveira[1,2]; T. Cunha-Oliveira[1,2]

[1]University of Coimbra, Center for Neuroscience and Cell Biology CNC- UC-Biotech, Cantanhede, Portugal; [2]University of Coimbra, Center for Innovative Biomedicine and Biotechnology CIBB, Coimbra, Portugal; [3]University of Coimbra, PDBEB - PhD Programme in Experimental Biology and Biomedicine- Center for Neuroscience and Cell Biology, Coimbra, Portugal

Background: Changes in redox homeostasis are associated with the progression of age-related diseases, which may be prevented with antioxidants. However, clinical trials have been disappointing despite promising *in vitro* assays, suggesting that preclinical assays should be better designed to be more consistent with *in vivo* results. Since conventional cell culture assays introduce artifacts influencing redox research, and mitochondria are active players in cellular redox homeostasis, we aim to evaluate redox responses under different metabolic contexts by modulating cellular reliance on mitochondrial energy production *in vitro*.

Materials and Methods: Normal Human Dermal Fibroblasts (NHDF) were cultured in the absence of glucose (to stimulate oxidative phosphorylation, OXPHOS, OX medium) and compared with cells cultured in high glucose (HG) or low glucose (LG) media, to determine how different metabolic contexts can influence the cellular effects of oxidants, specifically H_2O_2 and *tert*-butyl hydroperoxide (*t*-BHP). Oxygen consumption rate (OCR) and extracellular acidification rate (ECAR) were measured using the Seahorse XFe96 Extracellular Flux Analyzer, mitochondrial network morphology was assessed by confocal microscopy, and substrate oxidation was determined using Biolog Metabolic Phenotype Microarrays. The response to oxidative stress was evaluated by resazurin and DCF fluorescence.

Results: NHDF cultured in OXPHOS conditions presented higher sensitivity to mitochondrial inhibitors, rotenone,