DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **6 luglio 2022**
alle ore **11.00**

in presenza:

Aula 1, FaBiT, via Belmeloro 6, Bologna

oppure in streaming:

https://teams.microsoft.com/l/meetup-join/19%3aN09c0NIyEssBnF7ObCyDOQwkgDWm1qdd9f7F2nJV9fw1%40thread.tacv2/1631519544944?context=%7b%22Tid%22%3a%22e99647dc-1b08-454a-bf8c-699181b389ab%22%2c%22Oid%22%3a%225a941351-ef41-4aa4-8771-fa50a6d62ca1%22%7d

Prof. Erika Fernández-Vizarra

Department of Biomedical Sciences
University of Padova, Italy

terrà un seminario dal titolo:

COOPERATIVE ASSEMBLY OF THE MITOCHONDRIAL RESPIRATORY CHAIN

Chair: Dr. Gessica Batani (B2F2 PhD program) and Luigi D'Angelo (CMB PhD program)

Colleghi e studenti sono cordialmente invitati

Commissione Ricerca e Attività Correlate - FaBiT

ABSTRACT

The deep understanding of the adaptation of the mitochondrial respiratory chain (MRC) activity to different metabolic settings, as well as the consequences of MRC dysfunction as the underlying cause of disease, relies on the availability of a well-grounded model of MRC biogenesis. The lack of a consistent framework to explain the modes and mechanisms governing the assembly of the MRC complexes and supercomplexes works against progress in the field. The “plasticity model” was postulated as an attempt to explain the observation that the mammalian MRC complexes co-exist as individual entities and supercomplex species. However, the many consistent data accumulated throughout the years question the universal validity of the “plasticity model” as originally proposed. Instead, a “cooperative assembly model” appears to provide a much better explanation to the phenomena observed when studying MRC biogenesis in physiological and pathological settings.

BIOGRAPHICAL SKETCH

Erika Fernández-Vizarra obtained her PhD from the University of Zaragoza, Spain, in 2005. During her doctorate she studied the mechanisms regulating mitochondrial DNA expression and MRC biogenesis in different cell types and tissues, under the supervision of Patricio Fernández and Julio Montoya. After, she joined Massimo Zeviani’s laboratory at the Istituto Neurologico “C. Besta” in Milan, Italy, working in the identification and characterization of nuclear genes involved in mitochondrial disease. There, she identified a number of genes encoding factors necessary for the correct biogenesis of the MRC, with a particular interest in complex III assembly factors. In 2008 she went back to the University of Zaragoza working with José Antonio Enriquez on the assembly of complexes I and III and the supercomplexes. Then, in 2010, she established the Mitochondrial Pathology laboratory at the Research Unit at the “Miguel Servet” University Hospital and the Health Sciences Institute of Aragon in 2010. There, she carried out research studying mechanisms and factors governing the assembly of complex III in health and disease. In 2013 she moved to the Mitochondrial Biology Unit of the Medical Research Council and University of Cambridge in the UK. As a Senior Scientist in the Mitochondrial Medicine group, she continued working on unravelling the role of disease genes as biogenetical factors of complexes I, III and IV, as well as applying and optimizing SILAC-based proteomic techniques that have proven useful for the characterization of MRC assembly. From June 2020 to September 2021, she spent some time in Kostas Tokatlidis’ lab learning about redox regulation of mitochondrial biogenesis and mitochondrial reactive oxygen species formation. From October 2021 she is a Researcher at the Veneto Institute of Molecular Medicine and the Department of Biomedical Sciences at the University of Padova, Italy. There she is establishing research lines aimed at understanding the mechanisms regulating MRC biogenesis and its disturbances in mitochondrial disease, as well as the tissue-specific metabolic consequences of these alterations.