D-MEM PhD-UNIMI | Doctorate program Milan EXPERIMENTAL MEDICINE

BIOMETRA

UNIVERSITÀ DEGLI STUDI DI MILANO

International PhD Program in Experimental Medicine

D-MEM SEMINAR

NICO MITRO

Dept of Pharmacological and Biomolecular Sciences

July 14th, 2021- 4.30 PM

Zc3h10 dependent control of cellular metabolism

Metabolism is the set of life-sustaining reactions in organisms.Metabolic reactions are categorized as catabolic, the breaking down of metabolites to produce energy, and/or anabolic, the synthesis of compounds that consume energy. The balance between catabolism of the preferential fuel substrate and anabolism define the overall metabolism of a cell or tissue. Our research activities are focused on the role of mitochondria which represent the energy-generating hubs of the cells. Using a genome-wide functional screen, transcriptomics, proteomics and metabolomics, we identify the poorly characterized protein Zinc finger CCCH-type containing 10 (Zc3h10) as regulator of mitochondrial physiology. Depletion of Zc3h10 in mouse cells, or a loss-of-function mutation (Tyr105Cys) in humans, results in reduced respiratory capacity and impairment of mitochondrial metabolic pathways. Furthermore, human homozygotes or this Zc3h10 mutation have increased body mass index (BMI), fat mass, altered fat distribution, elevated circulating triglyceride and glucose levels. These data are further sustained by the role of Zc3h10 as a key factor during the differentiation program of mesenchymal stem cells to mature white adipocytes. Together, these studies reveal the importance of Zc3h10 as metabolic regulator in the transition from physiology to pathophysiology such as the development of obesity and type 2 diabetes.

The seminar will be in blended modality

For seat reservation click HERE

For online connection click HERE

Further information: phd.experimental-medicine@unimi.it

facebook PhD in Experimental Medicine - University of Milan

twitter @DMEM_PhDunimi