

Màj 09/06/2022

UE 2.1. Current concepts in Biology and Health Sciences

6 ECTS

Teaching unit shared by the following tracks:

- Cellular, Integrative and Translational Neurosciences
- Diabetes and cardiovascular diseases
- Fundamental and clinical oncology, towards precision medicine
- Immunity, Inflammation et Infection

EC7: Mitochondria and pathophysiology

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Mitochondria contribute to many processes central to cellular function, so it is not surprising that genetic and/or functional mitochondrial abnormalities participate to the pathophysiology of many diseases. In addition to genetic mitochondrial diseases, several neurodegenerative diseases (Huntington, Alzheimer's or Parkinson's diseases), diabetes and obesity, ischemia / reperfusion processes, drug toxicity, as well as proliferative processes are closely associated with mitochondrial dysfunctions.

The main objective of this meeting is to address the fundamental aspects of mitochondrial dysfunction as well as its cellular repercussions in precise pathological contexts. Presentations will be based on recent knowledge of the role of mitochondria in pathophysiology.

Organization of the day

- Recall on mitochondrial functions. Mitochondrial dynamics and concept of network. Methodological aspects (mitochondrial membrane potential, oxygraphy & Seahorse apparatus).
- Demonstration of cellular metabolism: The Pasteur effect, The Warburg effect, The Crabtree effect.
- Biological diagnosis of mitochondrial disorders: place of respiratory functional explorations.
- Mitochondria and cancer.
- Presentation and animation of articles by students.

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