UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Mechanisms and Biomarkers of Neuronal Damage

2324-2-F0901D047-F0901D092M

Aims

The student should be able to integrate basic knowledge regarding the field of neuroscience, besides pathogenic mechanisms, therapeutic goals and present research trends in the most important diseases of the nervous system.

Contents

This course aims at contributing to the training of a medical biotechnologist able to integrate basic principles of neuroscience in order to understand the biological basis, main pathogenic mechanisms and experimental models regarding nervous system disorders. Models will be analyzed stressing critical aspects and role in the development of novel therapeutic strategies.

Detailed program

Neuroscience, an integrative approach: (1) structure and function; (2) your brain, your self; (3) thought processes; (4) the dynamic brain; (5) breaking from neurodogma; (6) emerging technologies and challenges;

Neurological disorders, a translational approach: mechanisms and biomarkers of neuronal damage; role of glutamate and GABA in CNS disorders; link between inflammation, oxidative stress and excitotoxicity; physiopathology of stroke and multiple sclerosis; genetics of Parkinson; Alzheimer and amyotrophic lateral sclerosis; molecular mechanisms of neurodegenerative disorders.

Prerequisites

Basic knowledge of anatomy and histology, physiology and general pathology and neuropharmacology.

Advanced knowledge of biochemistry, molecular biology and genetics.

Teaching form

Frontal lectures.

Textbook and teaching resource

Slides, scientific papers.

Semester

First semester second year.

Assessment method

Oral exam.

Office hours

By e-mail to the professor.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING