UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Basic Mechanism of Epilepsy

2425-122R-13

Aims

The goal is to equip students with the knowledge they need to understand the fundamental concepts underlying current research in the neurophysiology of central circuits. Lectures will allow students to learn how to identify interesting biological questions and feasible approaches to address the questions.

Suggested for students attending the 1 year of the PhD program

Contents

Short description of contents

- experimental work introduces the student to the main electrophysiological research techniques

-tructure and function of ion channels, generation and propagation of action potential, firing properties and physiology of synaptic transmission

- the hypersynchronous discharge: persistent neuronal changes and circuitry rearrangement

Detailed program

Electrical events in excitable cells
Ion channels - channelopathies - structure and function of ion channels, firing properties and physiology of synaptic transmission
Synapses in the central nervous system - Excitatory and inhibitory neurotransmission

EEG - rhythmogenesis - synchronous activity- hypersynchronous discharge: persistent neuronal alterations and circuit rearrangements
In vitro brain slices - experimental models of epilepsy
Antiepileptic drugs - drug resistance in epilepsies

Prerequisites

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Teaching form

Interactive lectures, includes problem sets and reading of original papers

Textbook and teaching resource

Principles of neural science

Edizione Inglese di Eric R. Kandel

Slides provided by the teacher

Semester

Second semester, to be determined according to the overall teaching plan

Assessment method

Final evaluation by written test (multiple choice)

Office hours

By communication to be sent to giulio.sancini@unimib.it

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING