UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Animal models of human disease in neuroscience

2425-122R-09

Aims

The aim of the teaching is to explain how the use of animal models could improve the knowledge and treatment of human diseases and to evaluate the problems connected with their management and with the extrapolation of data from animals to humans.

Contents

Main points of the lectures:

Reasons why the use of animal models is critical for scientific research and problems associated with animal experimentation.

Different kinds of animal models with particular regard to the most commonly used animals in biomedical research: the laboratory mouse and rat.

Examples of established models of peripheral and central nervous system diseases

Detailed program

General introduction.

Main general issue regarding the use of animal models (i.e. legislation, RRR ...)

The use of animal models in biomedical research

Different kinds of animal models

Rodents as more employed animals in biomedical research : the laboratory mouse (mus musculus) and rat (rattus norvegicus)

What is useful to know about laboratory mouse and rat. Brief videos will be shown.

Animal models of peripheral nervous system disease:

- anatomy and physiology of the peripheral nervous system

- main clinical aspects of peripheral neuropathies, focusing in particular on antineoplastic drug-induced peripheral neurotoxicity

- animal models of chemotherapy-induced peripheral neurotoxicity (CIPN)

Animal models of central nervous system disease:

- brief introduction on immunity and immune system

- animal models of autoimmune diseases, focusing in particular on Experimental Autoimmune Encephalomyelitis (EAE)

Main problems regarding the use of animal models in biomedical research.

Prerequisites

For students attending the II year of the PhD program in Neuroscience.

Teaching form

Lectures

Textbook and teaching resource

Scientific papers will be suggested by the teachers during the lessons

Semester

I-II semester

Assessment method

Evaluation : Multiple choice test at the end of the lectures

Office hours

Upon appointment:
valentina.carozzi1@unimib.it

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION