UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Bioactivity in Biological Models

2223-1-F0601Q110-F0601Q115M

Aims

Knowledge and understanding
This teaching module, which is the last module of the "*One Health Laboratory: from the environment to health*" aims to evaluate the effect of the plant extracts obtained in the "Approaches for the study of natural bioactive molecules" laboratory. The goal is to test their antioxidant and anti-inflammatory properties in specific cellular systems. The student will acquire the skills to evaluate if the purified extracts/molecules represent resources for disease prevention and if they can be considered bioactive molecules to be used in the nutraceutical and food context.
Capacity
Thanks to the attendance of the laboratory, the student will learn to know and use the instruments present in a cellular biology laboratory.
Autonomy of judgment
Develop the skills to verify the effect of the bioactive molecules present in the extracts for their potential use in the nutraceutical, cosmetic and pharmaceutical sectors.
Communication skills
This teaching module aims to provide to the student the ability to clearly and correctly describe the topics covered during the course, using an appropriate technical language, clarity and synthesis skills.
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Contents

The third part of the "*One Health Laboratory: from the environment to health*" involves the study of the effects of biodiversity and natural substances such as anti-inflammatory, antioxidant and anti-neurodegenerative in a context of prevention and well-being.

Detailed program

This third part of the "*One Health Laboratory: from the environment to health*" course will lead the student to understand the resources can be found in biodiversity in terms of bioactive metabolites able of promoting well-being and preventing disease.
The vitality of specific cellular systems will be assessed in the presence of the obtained extracts, including the antioxidant properties by also testing the activity of some enzymes involved in cellular defense against oxidative stress. The properties of the plant extracts will also be considered according to their effectiveness in reducing the levels of reactive oxygen species. Finally, specific inflammatory markers will be investigated by Elisa assays to evaluate the anti-inflammatory effect of the extracts.

Prerequisites

Knowledge of chemistry, biochemistry and botany, for a full understanding of the lessons, but also to be able to carry out laboratory activities.

Teaching form

Mainly laboratory activity.

Textbook and teaching resource

The teaching material consists of slides shown in class which will be provided on the teaching e-learning platform.

Semester

Second semester.

Assessment method

The knowledge acquired during the course will be assessed through an oral exam which has the aim of verifying the acquisition of the expected knowledge according to the objectives' course, the ability to discuss the program using the appropriate terminology. The final evaluation will be carried out by analyzing the written report on the activities carried out during the laboratory and some oral questions, aimed at ascertaining the understanding of the theoretical topics and experiments carried out in the laboratory.

Office hours

By appointment by writing to the teacher (paola.coccetti@unimib.it).

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION