



INSTITUTO DE HIGIENE E
MEDICINA TROPICAL
DESDE 1902

MEDICINAL PLANTS AND NATURAL PRODUCTS IN PARASITOLOGY

CU characterization:

CU name:

Medicinal Plants and Natural Products in Parasitology

Scientific area acronym:

PA

Duration:

Semestral

Working hours:

56

Contact hours:

34

ECTS:

2

Observations:

Optional CU

Teacher in charge and respective teaching load in the CU:

Fernando Cardoso - 34.3 hours

Other teachers and respective teaching load in the CU:

Pedro Ferreira - 7 hour

Sofia Cortes - 6 hour

Maria Luisa Lobo - 1 hour

Philip Havik - 1 hour

Other invited teachers - 3 hours



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Intended learning outcomes (knowledge, skills and competences to be developed by the students):

At the end of this module, students should be able to contribute to research or planning and implementing interventions directed to the use of plants and natural products in bioassays.

Specifically, it should be capable of:

1. Assess the importance of ethnobotany medicinal plants.
2. Apply different methods of treating biological material so as to isolate, identify and characterize biological extracts of natural products.
3. To design and implement bioassays to validate the natural products of interest in Medical Parasitology.
4. Outline a strategy for selection of therapeutic targets with the use of bioinformatics tools.

Syllabus:

- I. Medical Plants And Natural Products
 - Traditional medicine, ethnobotany and Phytotherapy with application in Medical Parasitology
 - Flora Medicinal and secondary metabolism of natural products.
- II. Chemistry Of Natural Products
 - Isolation, purification and identification of natural products
 - Libraries extracts, natural products and other chemicals.
 - Research therapeutic targets in Medical Parasitology
- III. Biological Activity
 - Bioassays of Natural Products
 - Studies on the use of herbal and natural products in Parasitology:
 - 1) Presentation of studies in Medical Helminthology
 - 2) Presentation of studies Medical Protozoology.
 - 3) Presentation of studies in Medical Entomology
- IV. Demonstrative practical classes:
 - Collecting plants and preparing a herbarium
 - Extraction and TLC Chromatography, detection of chemical compounds.
 - Cytotoxic activity of plant extracts with animal cells.
 - Inhibitory and antioxidant activity of plant extracts.



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Teaching methodologies (including assessment):

The teaching of this Course will be based on the lecture method is organized into 9 hours of lectures, the demonstrative and active methods applied in four theoretical-practical 12 hours practical classes and seminars (3h) a total of 24 hours classroom. There will also be sessions of tutorials (10 hours) to support the self-study and preparation of the seminar, the practical report and oral presentation. Documents classes and formative assessment exercises are available in Moodle.

The student assessment will be done based on the following elements:

1. Report of the practical classes, group, with about 2000 +/-200 words (excluding graphs and bibliography) 60% of the final grade.
2. Group seminar with presentation of a scientific paper 30% of the final grade.
3. Performance of students in practical classes, assessed by different methods including practical exercises and answers to questionnaires 10% of the final grade.

Compliance with a minimum attendance of 75% of the classes.

References for consultation / mandatory existence:

- 1- Jayanta Kumar Patra; Gitishree Das; Sanjeet Kumar; Hrudayanath Thatoi(2020) Ethnopharmacology and Biodiversity of Medicinal Plants, Publisher: Apple Academic Press, Incorporated.
- 2- Ayeleso, Ademola Olabode; Goyal, Megh Raj (2019) Bioactive compounds of medicinal plants: properties and potential for human health Publisher: Apple Academic Press Inc City: Africa.
- 3- Martinez, José Luis; Muñoz-Acevedo, Amner; Rai, Mahendra (2019) Ethnobotany: application of medicinal plants, Publisher: CRC Press/Taylor & Francis GroupCity.
- 4- Patra, Jayanta Kumar; Rudramurthy, Gudepalya Renukaiah; Swamy, et al(2019) Medicinal plants: chemistry, pharmacology, and therapeutic applications, Publisher: CRC Press.