

**COURSE DATA****Data Subject**

Code	43027
Name	Guided isolation and identification of bioactive natural products
Cycle	Master's degree
ECTS Credits	5.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
2138 - M.D. in Research in and Rational Use of Medicines	Faculty of Pharmacy and Food Sciences	1	First term
3103 - Biomedicine and Pharmacy	Doctoral School	0	First term
3170 - Programa de Doctorado en Biomedicina y Farmacia	Doctoral School	0	First term

Subject-matter

Degree	Subject-matter	Character
2138 - M.D. in Research in and Rational Use of Medicines	5 - Guided isolation and identification of bioactive natural products	Optional
3103 - Biomedicine and Pharmacy	1 - Complementos Formación	Optional
3170 - Programa de Doctorado en Biomedicina y Farmacia	1 - Complementary Training	Optional

Coordination

Name	Department
CABEDO ESCRIG, NURIA	135 - Pharmacology
CORTES MARTINEZ, DIEGO MIGUEL	135 - Pharmacology

SUMMARY

Optional subject belonging to research itinerary of the “Master en Investigación y Uso Racional del Medicamento” focusses on the main aspects of the laboratory methodology used in the field of research on new natural molecules with pharmacology interest. It is dedicated to the process of synthesis, purification and structural elucidation of bioactive natural products.

**Aims:**

Know the initial theoretical-practical bases of the chemical synthesis processes of analogues of natural molecules with therapeutic interest, the extraction and purification methodology by means of column chromatography, as well as the structural elucidation by means of nuclear magnetic resonance, HPLC and mass spectrometry.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

Its convenient students have passed Pharmacognosy, Organic Chemistry, Analytical Chemistry and Pharmacology in order to follow and understand the contents.

OUTCOMES**2138 - M.D. in Research in and Rational Use of Medicines**

- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.
- Be able to access to information tools in other areas of knowledge and use them properly.
- Be able to apply the research experience acquired to professional practice both in private companies and in public organisations.
- Capacidad de seleccionar y gestionar los recursos disponibles (instrumentales y humanos) para optimizar resultados en investigación.
- Dominar el método científico, el planteamiento de protocolos experimentales y la interpretación de resultados en la búsqueda, desarrollo y evaluación de nuevos fármacos.

LEARNING OUTCOMES

**DESCRIPTION OF CONTENTS****1. Synthesis, isolation and elucidation of bioactive natural molecules**

Chemical reactions used in the preparation of structures of natural products.

Monitoring of reactions by thin layer chromatography.

Application of conventional methods of purification of organic molecules: liquid/liquid extraction and column chromatography.

Fundamentals and applications of high pressure liquid chromatography (HPLC)

Structural elucidation of natural or synthetic molecules by nuclear magnetic resonance (NMR).

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Laboratory practices	15,00	100
Tutorials	5,00	100
Study and independent work	15,00	0
Readings supplementary material	15,00	0
Preparation of evaluation activities	15,00	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	15,00	0
TOTAL	125,00	

TEACHING METHODOLOGY**EVALUATION****REFERENCES****Basic**

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- Wagner, H. and Bladt S. Plant drug analysis, 2009, Springer.
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Additional

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