UCL Université catholique de Louvain

WFARM2508

2015-2016

Isolation of Natural Products and Structural Analysis

3.0 credits	20.0 h + 10.0 h	2q

Teacher(s) :	Muccioli Giulio ; Leclercq Joëlle (coordinator) ;
Language :	Français
Place of the course	Bruxelles Woluwe
Main themes :	- Extraction, fractionation and purification methods of compounds from complex media: advantages and limits of the different methods. - Mass spectrometry: ionisation techniques, ions analyses and main fragmentations. - Nuclear Magnetic Resonance (NMR): basic principles - Use of spectral data for structure determination of organic drugs
Aims :	At the end of this course, the students should be able to propose a method of extraction and purification for different types of organic molecules in complex media and identify the structure of simple compounds from spectroscopic data. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	The course is divided in 4 parts: 1. Extraction, fractionation and purification methods of organic molecules from complex media: extractions from solid media (SFE,) or liquid-liquid, preparative chromatographies on different stationary phases: practical aspects, advantages and limits. Students will receive notes and a general presentation. Discussion and explanations will be given according to their questions. 2. Mass spectrometry, ionisation techniques (EI, FAB, CID, ESP, TSP, APCI,), analysis methods (ion trap, quadrupole, magnetic systems,) and major fragmentation. 3. NMR: essential data of NMR allowing the student to use information form 1D 1H and 13C NMR spectra: 2D NMR is also rapidly explained. 4. Case studies: using real spectra, the students will learn how to determine structures.
Other infos :	Organic chemistry and analytical chemistry Examination: students will receive spectra from a simple compound and a publication on purification of natural molecules. They will have to determine the structure of the molecule and comment the method of purification. Notes are allowed during the preparation. Students will then present and defend their work in front of the teachers who will also question them on the general theoretical aspects. Slides, notes, films and visit of a purification laboratory. The second part of the course is based on"Spectrométrie de masse" of de Hoffmann, Charette et Stroobant, Dunod, 1999 and the third on "Identification spectrométrique de composés organique" de Silverstein, Basler et Morill, De Boek 1998. These books will be made available to each student
Faculty or entity in charge:	FARM

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Pharmacy	FARM2M	3	-	