UCLouvain

wfarm1302

2025

Pharmaceutical organic chemistry

6.00 credits	45.0 h + 30.0 h	Q1 and Q2

This learning unit is not open to incoming exchange students!

Teacher(s)	Frédérick Raphaël (coordinator) ;Lambert Didier ;Ravez Séverine (compensates Frédérick Raphaël) ;Spillier Quentin ;
Language :	French > English-friendly
Place of the course	Bruxelles Woluwe
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	The general theme is the structure - activity relationship of the drugs. Since this theme is broad, it has to be exemplified by selected topics: (i) chemical and physico-chemical properties of drugs in relationship with their pharmacokinetic and pharmacodynamic behavior (phototoxicity, in vitro and in vivo hydrolysis, charge (pKa), logP (Lipinski's rule), chirality) (ii) (ii) ligand - receptor interaction, with regard to physico-chemical properties : ature of the intermolecular interactions, types of targets (receptors, ion channels, enzymes, transporters, pumps), consequence of the binding of a xenobiotic on these targets (iii) drug discovery and optimization process, scope and limitation of the drug design techniques. The practical exercises allow students to establish themselves their own experimental plans in order to assign the structure of simple molecules (spot tests, derivatization, spectroscopy).
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 At the end of this formation, students are able to make a link between a drug structure and the interaction of this drug with the living, and establish structure - pharmacological activity relationships (drug design, potential actions of a molecule on a given receptor) as well as structure - pharmacokinetic behavior relationships (crossing of physiological barriers, pKa, logP, chemical and photochemical stability). The practical exercises aim at assuring the transition between those of FARM1230 and FARM2205: students must be able to design a rational experimental plan
Bibliography	Drug-like Properties: Concepts, Structure Design and Methods, 1st Edition from ADME to Toxicity Optimization Authors: Li Di Edward Kerns The Practice of Medicinal Chemistry, Editors: Camille Wermuth David Aldous Pierre Raboisson Didier Rognan
Faculty or entity in charge	FARM

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Pharmacy	FARM1BA	6	WFARM1231 AND WFARM1232 AND WFARM1219	🔍