WFARM2119

2010-2011

Synthesis, analysis and quality control of drugs

6.0 credits	60.0 h

Teacher(s) :	Lambert Didier ; Leclercq Joëlle ; Muccioli Giulio ; Poupaert Jacques (compensates Lambert Didier) ; Muccioli Giulio (compensates Lambert Didier) ;
Language :	Français
Place of the course	Bruxelles Woluwe
Main themes :	- In the analytical part, the teachers will discuss the main methods and norms used for purity and quality control of drugs (qualitative and quantitative analysis of impurities) - In the drug synthesis part, the teachers will discuss, using several chemical families of drugs as example, the modes of preparation, and the interactions of the drugs with their targets and/or the proteins related to their metabolism. The synthesis processes will be explained with a special focus on secondary reactions and impurities produced.
Aims :	The aims of the first part of the course are to give the student the appropriate knowledge: - To understand and use efficiently reference documents as pharmacopoeias for quality control of a medicine or its constituents. - To allow the student to choose the most adequate analytical method to solve a given problem in drug analysis (mixture of active molecules, related substances,) The aims of the second part of the course are to give the student the appropriate knowledge: - To understand the development of a drug, its mechanism of action (interaction with targets) and its production via synthesis, isolation or biotechnology - To allow him, through chosen examples, to understand problems and methodology in pharmaceutical chemistry *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 :	Part 1: Quality control 1. Drugs quality control - Pharmacopoeia : general aspects 2. Purity of drugs and main degradation pathways 3. Identification methods (IR, NMR) 4. General identification reactions 5. Separation methods (liquid-liquid and solid-liquid extractions, liquid, supercritical and gaz chromatographies, electrophoresis). 6. Quantification methods and validation of analytical methods 7. Introduction to MS, coupling of MS with separation methods 8. Tests 9. General monographs Part 2: Synthesis 1. Drugs with central nervous system activities, crossing of blood-brain barrier and related prodrugs 2. Antihistamine drugs: success, failure, future developments 3. Antiviral drugs 4. Drugs of the angiotensine receptor 5. Phosphodiesterases inhibitors 6. Drugs from biotechnology Part 3 Discussion of monographies of drugs explained in part 2.
Other infos :	Prerequisite: - Organic chemistry, organic pharmaceutical chemistry - Introduction to analytical chemistry, instrumental analysis
Cycle and year of study :	> Master [120] in Pharmacy
Faculty or entity in charge:	FARM