Course Specifications

Valid as from the academic year 2020-2021

Introduction to Pharmaceutical and Medicinal Chemistry (J000383)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)

Credits	Study time	Contact hrs
4.0	120 h	30.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	Dutch	Gent	lecture	30.0 h

Lecturers in academic year 2020-2021

Van Calenbergh, Serge	FW01	lecturer-in-charge

Offered in the following programmes in 2020-2021	crdts	offering
Bachelor of Science in Pharmaceutical Sciences	4	A

Teaching languages

Dutch

Keywords

Drugs, targets, mechanism of action, signal transduction.

Position of the course

Since a few decennia therapeutically interesting (“validated”) targets often form the starting point in the search for new drugs (“target-based drug discovery”). This introductory course summarizes the main target classes, as well as their intracellular signaling. Attention is paid to the interactions that govern complex formation between drugs and their targets. Common in vitro assays used to study the effect of drug (candidates) on these targets are discussed.

Contents

This introductory course mainly aims to prepare the students for the courses of Medicinal Chemistry and Pharmacology. It contains the following chapters: - Introduction to enzymes, receptors en the mode of action of drugs - Membranes and structurally nonspecific drugs - Binding forces involved in the formation of drug-receptor complexation - Stereochemical aspects - Methods to study receptors - Receptor models - Receptors and transmembrane signaling - Introduction to QSAR

Initial competences

Having successfully completed the course in Organic chemistry or having otherwise acquired the corresponding competences.

Final competences

1 To integrate skills in and knowledge of organic chemistry, biochemistry and physiology.
2 To have a sound grasp of the mode of action of drugs on a molecular level (from interactions between a drug and a receptor over mechanisms for signal transduction to intracellular reactions).
3 To apply different stereochemical aspects from organic chemistry on drugs and to understand the importance of stereochemistry of a drug for pharmacological activity.
4 To be able to select an appropriate experiment to profile drug(s) (candidates) in vitro (affinity, intrinsic activity, selectivity, etc.).
5 To illustrate the main steps in drug development before it is marketed.
6 To discuss the content of a scientific medicinal chemistry-related publication in plain language.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

Teaching methods

Lecture

Extra information on the teaching methods

Because of COVID19 alternative teaching methods may be rolled out if necessary.

Learning materials and price

An elaborate syllabus (in Dutch) (Price: € 20). Powerpoint slides projected during lectures are available through Minerva.

References

Recommended book: An Introduction to Medicinal Chemistry (4th Edition) - Graham L. Patrick

Course content-related study coaching

Students have several opportunities to ask the lecturer questions, both individually as in group: after classes or by appointment.

Evaluation methods

end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period

Written examination with multiple choice questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with multiple choice questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Written examination with multiple choice questions. For the final score, the principle of a higher caesura will be applied. This implies that more than half of the questions must have been answered correctly to succeed.

Calculation of the examination mark