Course for Ph.D. students
XLII Cycle (1 Nov 2026 – 31 Oct 2029)

Curriculum
Innovation in Pharmaceutical Sciences

Title
Basic Concepts of Stereochemistry for Drug Discovery (2 ECTS – basic course)

Prof. Claudio Curti (University of Parma)

Course language: English

Scheduling:
February 2027

To attend the course please contact:
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Course description

The relationship between stereochemistry and the biological activity of molecules is a central theme in both pharmaceutical and food sciences. It spans a wide range of topics, from the design and synthesis of single stereoisomers to the investigation of their pharmacokinetic, pharmacodynamic, and sensory or metabolic properties. In such a dynamic and interdisciplinary context, it is essential to provide PhD students with a solid and up-to-date understanding of stereochemistry. This course is therefore designed to strengthen the fundamental concepts of stereochemistry and to promote their application in the fields of pharmaceutical and food sciences. In addition to revisiting the core principles of stereochemistry, often only partially addressed in undergraduate organic chemistry courses, the program will introduce the basic concepts of asymmetric catalysis. The course will be structured into three main parts: (*i*) fundamental concepts and stereochemical notation; (*ii*) methods for the determination of enantiomeric excess and absolute configuration of chiral molecules; and (*iii*) an introduction to the principal synthetic strategies and enantiomeric resolution approaches used for the preparation of enantiomerically enriched chiral compounds.
With this aim, we propose a basic course in stereochemistry (2 ECTS - 12 hours – 3 hours/week), tailored for PhD students who wish to build or reinforce their expertise in stereochemistry within an interdisciplinary framework.

Evaluation: YES (Written Essay)