UNIVERSITÀ DEGLI STUDI DI TORINO

ID

VP68_DIP_BIOTEC

Visiting Professor Program
Academic year 2022/2023

TEACHING COMMITMENT: 16 hours

COURSE TITLE

PHARMACOLOGY AND DRUG THERAPIES-Drug Discovery: basic principles

TEACHING PERIOD

1st term

SCIENTIFIC AREA

Medicinal Chemistry

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Introduction to drug discovery ; identification of the target and the ligand ; virtual screening ; drug discovery based on fragments ; transformations of lead ; isosterism and bioisosterism ; Introduction to QSAR ; synthesis of peptides and SPPS ; Combinatorial Approach to Drug Discovery ; example of study.

Physico-chemical properties of molecules and their influence on the interaction between drugs and their targets :

- Type of bond and their strength, intermolecular forces, ionization, lipophilicity;
- Relevance of the structures of proteins and DNA drug-receptor interaction;
- Principles of Pharmacodynamics Pharmacokinetics (ADMET);
- Molecular Descriptors involved in the determination of the ADME profile of potential drugs;
- Principles of Pharmacodynamics Pharmacokinetics (ADMET);
- Structure- activity relationship and drug design;
- Drug Discovery for biotechnological drugs;
- Nanotechnology for drug delivery.

LEARNING OBJECTIVES

The main objective of the course is to provide students with the basics of drug discovery and understanding the relationship between the chemical structure of molecules and their pharmacological activity. Moreover, the course prefigures to provide the student with a highly professionalized competence of business and national pharmaceutical research centers, on the different aspects of instrumental analysis in the different phases of the discovery, development and production process of the pharmaceutical industry.

TUTORSHIP ACTIVITIES

N/A

LAB ACTIVITIES

N/A

OTHER ACTIVITIES BESIDES THE COURSE

The Visiting Professor will give some seminars about biomedical engineering to PhD to research fellows

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VISITING PROFESSOR PROFILE

The visting professor may have experience in the area of biomedical engineering and nanosystems applied to medicinal chemistry.

CONTACT PERSON AT THE DEPARTMENT

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