The making of an innovative medicine

Clerc Roger G.

Cursus

| Approches moléculaires du vivant                | Obl. |
| Biologie computationnelle et quantitative     | Obl. |
| Biotechnologie et génie biologique            | Obl. |

Language: English
Credits: 2
Session: Oral presentation
Exam: Oral presentation
Workload: 60h
Hours: 28
Lecture: 14
Exercises: 14
Number of positions: 25

Frequency
Every year

Remarque
Next time Fall 2019

Summary
To expose participants to translational research (from bench to bedside and back) and drug discovery

Content
Through a logical series of presentations both from the participants and the lecturer (flipped classroom format, oral presentations, workshops) on the making of an innovative medicine, the entire and complex process starting from the therapeutic target identification up until the clinical development and use in clinical practice of a new molecular entity (NME) will be addressed and discussed.

The course is divided in twelve sections of each 2 periods of 45 minutes :
Section 1 Scope of the course, general organization, case study
Section 2 Historical perspective: the modern pharmacy
Section 3 Introduction to translational research: crossing the bridge
Section 4 Therapeutic target identification I & II
Section 5 Structure based drug design, medicinal chemistry, low/high throughput screening assays, multiple paralell parameters optimization MDO
Section 6 Therapeutic peptides and biologicals: today's - tomorrow's pharmacy
Section 7 Personalized Healthcare (PHC) precision medicine
Section 8 Pharmacogenetic polymorphisms, Pharmacogenomics
Section 9 In vivo pharmacology, investigative toxicology
Section 10 Clinical research, phase 0, phase I, II, III, IV
Section 11 Health Hackathon - Hacking medicine I
Section 12 Health Hackathon - Hacking medicine II

Minimum 4 participants
Maximum 25 participants

Note
This interactive introductory course to drug discovery and translational biomedical research (from the bench to bedside and back) involves an active participation of the attendants in form of in classroom presentations (flipped classroom). A detailed instruction for authors is made available at the beginning of the course. All participants are given the opportunity to practice the concept of an health hackathon focused on innovative therapeutic solutions. The presentations serve as course evaluation.

Learning Outcomes
• Evaluation of a potential therapeutic target
• Understanding in drug development

Keywords
Translational biomedical research/Drug discovery

Learning Prerequisites
Required courses
Basic Molecular Biology, Cellular Signaling, Pharmacology

Resources
Bibliography