BIO-698

The making of an innovative medicine

Clerc Roger G.

Cursus	Sem.	Type
Biotechnology and Bioengineering		Obl.
Computational and Quantitative Biology		Obl.
Molecular Life Sciences		Obl.

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

Frequency

Every year

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 Translational research: crossing the bridge: from bench to bedside and back
Section 4 Therapeutic target identification, several case studies
Section 5 Structure based drug design: the impact of medicinal chemistry, MDO, HTS
Section 6 Therapeutic modalities, peptides, DNA, RNA therapeutics, biologicals
Section 7 Personalized healthcare (PHC) and precision medicine, biomarkers
Section 8 Pharmacogenomics, pharmacogenetical polymorphisms
Section 9 In vivo pharmacology, investigative toxicology, drug safety
Section 10 Clinical research, phase 0, phase I, ii, iii, iv, do what patients need next
Section 11 Intellectual property, patents, scientific and clinical integrity
Section 12 Future medical breakthrough, somatic diseased gene editing

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. A detailed instruction for authors is made available at the beginning of the course. 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

“A prescription for change : the looming crisis in drug development” Pr M. Kinch UNC Press(2017) ISBN 978-1-4696-3062-5