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COURSE MODULE INFORMATION

CH2101: Medicinal Chemistry

Semester 1 and Semester 2 | Credits: 5

In this module the students will obtain an introduction into basic concepts of medicinal chemistry. There will be a theory and practical component. The theory component will deal with an introduction into biomolecule structure, with a focus on protein structure. Students will learn how drug molecules can interact with proteins, and the key interactions involved. Through a small number of case studies they will gain knowledge on how some drugs were discovered. In the practical component basic synthetic, analytical and computational techniques used in medicinal chemistry will be introduced (Language of instruction: English)

Learning Outcomes

1. Gain knowledge of the structure of building blocks of biomolecules that are receptors for drugs. A focus will be on amino acids and proteins, and the chemistry influencing the three dimensional structure of proteins
2. Understand and apply chemical principles to describe and discuss how drug molecules interact with their biomolecular receptors such as proteins. This covers the interactions involved in protein-ligand complex formation.
3. Gain knowledge and understanding of how drug interaction with a target are measured. In this regard how the potency and selectivity of drugs for their target receptor or enzyme is measured and how structure activity relationships are established will be covered.

4. Gain an appreciation for how physicochemical properties of compounds are important in medicinal chemistry. These include solubility, lipophilicity, stability, ADMET etc.
5. Use synthetic and analytical techniques in the laboratory to prepare & evaluate drug molecules. Use computational techniques to gain appreciation for protein structure, and the chemical nature of drug-receptor complexes, as well as calculation of physicochemical properties of compounds.
6. Gain knowledge and understanding of selected drugs were identified and developed and their mechanism of action
7. Understand and apply strategies to optimize potential drugs to improve pharmacodynamic and pharmacokinetic properties

Assessments

i This module's usual assessment procedures, outlined below, may be affected by COVID-19 countermeasures. Current students should check Blackboard for up-to-date assessment information.

- Written Assessment (65%)
- Continuous Assessment (35%)

Module Director

- Erica Burnell: [Research Profile](#) | [Email](#)

Lecturers / Tutors

- JUDY BUCKLEY: [Research Profile](#)
- KAREN KELLY: [Research Profile](#)
- PATRICK O'LEARY: [Research Profile](#)
- PAUL MURPHY: [Research Profile](#)
- JENIFER HENDEL: [Research Profile](#)

The above information outlines module CH2101: "Medicinal Chemistry " and is valid from 2018 onwards.

Note: Module offerings and details may be subject to change.

ABOUT NUI GALWAY

Founded in 1845, we've been inspiring students for 175 years. NUI Galway has earned international recognition as a research-led university with a commitment to top quality teaching.



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