

Chemical Toolbox for Drug Discovery

Module Code:	INC7016-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Pharmacy and Medical Sciences
Subject Area:	Cancer Therapeutics
FHEQ Level:	FHEQ Level 7 (Masters)

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	24
Tutorials	4
Directed Study	172

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims

To provide students with a current and critical evaluation of methods, techniques and strategies used to prepare drug molecules. In particular, a specific aim is to provide students with an understanding of the reagents and conditions used for selective molecular transformations used in drug synthesis.

Outline Syllabus

Topics to be covered include: Survey of methods for the synthesis of drug molecules, Functional group interconversion, selective molecular transformations, protection/deprotection strategies, simple carbocyclic and heterocyclic synthesis, strategies for diversity oriented synthesis. Emphasis will be placed upon a practical means of obtaining

organic molecules that are relevant in drug discovery, therefore, many examples of synthesis of pharmaceuticals will be presented.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Identify appropriate common and generally used chemical reagent, as well as practical means, of obtaining organic molecules that are relevant in drug discovery.
- 2 Design methods for the synthesis of complex organic drug molecules.
- 3 Critically evaluate, in the contexts which are relevant to drug discovery such as diversity oriented synthesis, strategies and methods for multi-step construction of organic drug molecules.
- 4 Develop specific as well as generic literature skills for life-long learning (literature and databases).

Learning, Teaching and Assessment Strategy

The LO is achieved through lectures covering methods in synthetic chemistry used in the preparation of drug candidates and drug molecules. The emphasis is put on strategic decision making processes based on availability of chemical routes and methods. Lectures provide examples of problem solving in this approach. Furthermore, students gain experience of problem-solving through exercises they do from real examples in drug synthesis (part of the coursework).

The assessment is done through examination of the ability to design strategy for finding solutions and to solve specific problems by using their knowledge of chemical synthetic methods. Both from examples in lectures and through assessed coursework, students gain experience of such problem solving activities before the final exam.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book	Comprising of a part A containing two questions of which both are answered, plus a part B containing four questions of which two are answered	2 hours	70%	Yes
Summative	Coursework	Four pieces of coursework (equally weighted), one		30%	No

from each
module lecturer

Legacy Code (if applicable)

Reading List

To view Reading List, please go to [rebus:list](#).