

Module Details	
Module Title:	Molecular Basis of Cancer and Cancer Therapy
Module Code:	INC7002-B
Academic Year:	2019-20
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	23
Tutorials	7
Directed Study	167

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims
To develop a systematic and critical understanding of the hallmarks of cancer, their implications for cancer treatment and opportunities for therapeutic intervention. The molecular biology of cancer will illustrate the identification of potential targets for therapeutic intervention and the importance of tumour pathology current and future treatment strategies.

Outline Syllabus
There are two major themes within this module. The first is designed to inform students of current practise in Oncology and will focus on the classification of tumours, pathological parameters used to determine therapeutic intervention strategies and the classical chemotherapeutic drugs. The later will focus on the classification of current drugs, their

mechanism of action and the problems associated with current drugs (i.e. toxicity, multi-drug resistance etc). It is widely acknowledged that new therapeutics are required and that tumour biology represents the driving force behind the development of new therapeutics. In order to understand these new approaches, the cancer pharmacologist must have a good understanding of the molecular and genetic/epigenetic basis of cancer and this therefore forms the basis of the second major theme in this module. This section will cover the 'hallmarks of cancer' in terms of self sufficiency in growth signals, evading apoptosis, insensitivity to anti-growth signals, sustained angiogenesis, tissue invasion and metastasis, unlimited replicative potential and genetic instability. The emphasis throughout will be placed on the differences that exist between tumour and normal cells as these represent a key step in developing novel therapeutics. Students will extend their literature searching, presentation and report writing skills in preparing a journal club, and molecular target profile report.

Learning Outcomes

1	Critically evaluate the molecular basis of cancer, its classification, current treatment approaches for cancer and the concept of target identification and validation as applied to anti-cancer drug discovery.
2	Critically evaluate and interpret the current research literature & state of the art reviews; interpret routine histological samples to analyse human tumour classification and examples of xenografts.
3	Develop a strategy to present a discussion of a research paper (Journal club); collate and summarise target evaluation for a defined report style.
4	Undertake analysis of the human genome database. Develop generic literature skills for life-long learning (literature & databases).

Learning, Teaching and Assessment Strategy

A combination of lectures, invited seminar speakers, student-led seminars and student directed learning. The student led seminars will consist of a journal club exercise where students will individually review and present a selected research paper. The independent work will be to prepare a detailed profile of a specific biochemical or molecular target that is of current interest in terms of therapeutic intervention.

Mode of Assessment

Type	Method	Description	Length	Weighting
Summative	Examination - closed book	Examination (two essays from a choice of five)	3 hours	60%
Summative	Coursework	Oral presentation (journal club) 20% Molecular target profile report	0-1000 words	40%

Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>.

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.