

Research Topics 1 in Cancer Biology and Therapeutics

Module Code:	BIS6007-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 6
Module Leader:	Dr Steven Picksley

Additional Tutors:

Dr Jennifer Waby, Dr M Victoria Vinader, Professor Paul Loadman, Dr Sobia Kauser, Dr Julie Thornton, Professor Anne Graham

Pre-requisites:	Immunology, Haematology and Transfusion Science 2017-
Co-requisites:	

Contact Hours

Type	Hours
Lectures	23
Tutorials	6
Laboratory	4
Directed Study	167

Availability Periods

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

Module Aims

The aims of this module are to: Deepen student's knowledge of the biochemistry, pathology and molecular biology of cancer, and its treatment using conventional chemotherapeutic drugs; to make students aware that knowledge and understanding of the molecular basis of cancer is driving the development of a new generation of targeted therapeutics; to facilitate

the development of practical skills and extend competence in oral and written communication

Outline Syllabus

The module has three key areas, the first is to understand the molecular basis of cancer, carcinogenesis and cancer genetics, with lectures on oncogenes, tumour suppressors, DNA repair, ageing/senescence, epigenetics, infectious agents and carcinogenesis. The second theme is cancer biology with lectures on regulation of the cell cycle, altered metabolism, apoptosis, autophagy, growth and anti-growth signalling, cancer stem cells, angiogenesis, invasion and metastasis. The third theme is molecular pathology with emphasis on skin cancer (including melanoma) and also on colon cancer and effects of diet, the detection, diagnosis and treatment of cancer; with lectures on classical pathology techniques, molecular pathology techniques, radio-therapy, immunotherapy, and chemo-therapy, and targeted therapeutics. These themes will be then developed by autonomous study in Research Topics II.

The current trends and modern techniques in cancer research and their impact on healthcare will be discussed. Current cancer research literature will be critically appraised, laboratory investigations conducted, data analysed and concise reports written.

Module Learning Outcomes

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

- 1 Discuss cancer biology and pathology, and the molecular basis of cancer.
- 2 Discuss how the hallmarks of cancer, explain and evaluate how these are driving forward the new generation of targeted therapeutics (HCPC standard 13).
- 3 Report, interpret and present scientific data, including evaluation of experimental design, using the correct scientific terminology (HCPC standards 3, 14, 10, 15).
- 4 Critically analyse and evaluate experimental data presented in the primary scientific literature to select and explain key complex aspects, which are at the forefront of the discipline (HCPC standards 1, 8, 13, 14).
- 5 Demonstrate knowledge and understanding of a range of appropriate research methodologies (HCPC standard 15).
- 6 Demonstrate an effective self-management of workload, time and resources to prepare and deliver concise oral reports, (HCPC standards 1, 3, 8, 10, 14).

Learning, Teaching and Assessment Strategy

Development of knowledge, understanding and critical appreciation will be via lectures, and applied in laboratory and seminar sessions. The core knowledge for this module is delivered in a series of lectures and workshops, supplemented by reference to current published scientific literature which requires extensive further reading and autonomous learning by the students. The specific laboratory skills required are developed in a series of practical classes and data analysis and interpretation skills are assessed by a written coursework test. the ability to explain scientific information clearly and concisely is assessed

by student-led presentations on a research topic in cancer biology. During directed study hours, students are expected to undertake reading to consolidate and expand on the content of formal taught sessions; research and prepare for assessments; revise material from formal taught sessions; and undertake specific elements of reading as directed. Private study will be facilitated and supported via the use of the VLE which will provide coursework advice and feedback, and revision support.

Reassessment of failed elements will be as per the original method of assessment. Where reassessment of the laboratory practical element is required, students will be given a data set or an opportunity to complete the laboratory practical on an alternative occasion, whichever is more appropriate.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Formative	Presentation	Students have a formative presentation session which involves presenting and peer observation (LO 3-6)	15 minutes	%	No
Summative	Presentation	Individual oral presentation (LO 3-6)	15 minutes	20%	No
Summative	Examination - closed book	One 2 hour examination (two questions to be answered from a choice of five) (LO 1-2)	2 hours	60%	Yes
Summative	Classroom test	Assessment of laboratory practical report (LO 3-5)	90 minutes	20%	No

Legacy Code (if applicable)

BM-3118D

Reading List

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