

Preclinical Models for Drug Evaluation

Module Code:	INC7001-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	12
Seminar	14
Directed Study	174

Availability Periods

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

Module Aims

To provide students with the opportunity to develop

- The knowledge and ability to solve complex problems and justify their decisions.
- Techniques for current and critical evaluation of pre-clinical models used to evaluate potential anti-cancer drugs.
- Training in the legislation of in vivo experimentation techniques leading to a successful application to the Home Office for a personal licence to undertake basic animal work.
- An understanding of the ethics involved in experimental work with animals.
- The ability to reflect on their practice to inform and plan their professional development.

Outline Syllabus

Topics to be covered include; in vitro based experimental models, biochemical assays for investigating drug target interactions, toxicology (in vitro and in vivo), in vivo models including syngeneic, xenografts and orthotopic models, novel molecular models of tumour biology, non-invasive imaging techniques, endpoint analysis for assessing efficacy and ethical issues associated with animal usage (the 3R's). Emphasis will be placed upon a critical analysis of the value of experimental models in terms of how data obtained in the laboratory setting translates into clinical activity and current or emerging issues in this field, particularly with regards to the ethics of animal testing.

Module Learning Outcomes

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

- 1 Demonstrate a systemic understanding of the pre-clinical screening pathway.
- 2 Demonstrate a systemic understanding of the types of assays and models which are utilised in the pathway.
- 3 Critically evaluate pre-clinical models, their advantages, disadvantages and ethical issues as applied to the field of anti-cancer drug development.
- 4 Demonstrate a sound understanding of the relevant ethical, experimental and husbandry issues relating to the Animals Scientific Procedures Act.
- 5 Systematically gather, critically analyse and evaluate data in order to develop screening strategies for specific drug types.
- 6 Demonstrate a sound understanding of the relevant ethical, experimental and husbandry issues and the Animals Scientific Procedures Act in order to acquire certification that will allow the student to apply at a later date for a UK Home Office or EU-based Personal Licence.
- 7 Utilise generic literature skills for life-long learning (literature and databases).
- 8 Explore ethical considerations when carrying out experimentation.

Learning, Teaching and Assessment Strategy

Learning outcomes 1, 2, 3 and 5 are developed and achieved through a combination of lectures and case studies that cover key topics and give applied examples with evidence based content delivered by faculty experts with students encouraged to identify evidence based arguments and critique these in relation to different therapies. Sources of material for directed study will be revealed to the students during the lecture course. This will include relevant slides, web-sites, documents and a range of online resources.

Learning outcomes 4 and 6 are developed and achieved through a training course which combines lectures and workshops that cover key topics. Sources of material for directed study will be revealed prior to the training course and will include relevant slides, documents and a range of online resources.

Learning outcomes 7 & 8 are developed primarily by completion of 2 pieces of coursework and an examination. The more expansive essay-based second piece of coursework will be informed by feedback to the first piece of coursework which consists of directed structured questions, whilst the stand-alone examination will lead to attainment of Home Office certification to allow the student to apply for a Personal Licence to work with experimental animals in the UK or EU in the future.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Coursework	Directed questions on a pre-clinical screening strategy		30%	No
Summative	Coursework	A detailed essay setting out a pre-clinical screening strategy	-2000 words	60%	No
Summative	Classroom test	Closed book Multiple Choice Questions (MCQ) test	1 hour	10%	No

Legacy Code (if applicable)

CR-4002D

Reading List

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