

Module Information

2022.01, Approved

Summary Information

Module Code	7102BTBMOL
Formal Module Title	Recombinant DNA and Genomics
Owning School	Pharmacy & Biomolecular Sciences
Career	Postgraduate Taught
Credits	30
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	30
Tutorial	2
Workshop	3

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	28 Weeks

Aims and Outcomes

Aims	To provide in-depth knowledge of current concepts and techniques in gene manipulation, emphasizing the developments and applications of genomics.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically discuss the underlying principles of recombinant DNA technology and be aware of emerging techniques and applications.
MLO2	2	Critically assess molecular methodologies as applied to specific problems in gene technology.
MLO3	3	Critically evaluate the development of transgenic plants/animals using molecular techniques, and assess the future impact of such research.
MLO4	4	Evaluate critically and use different methods for communicating scientific information; manipulate, interpret and analyse data critically.

Module Content

Outline Syllabus	Review of the development of gene technology including vector design, transformation/transfection methods Gene expression: e.g. RNA interference, qPCR, Expression microarrays Genomics: e.g. gene cloning; genome sequencing; Polymerase Chain Reaction and related techniques; site-directed mutagenesis; nucleic acid hybridisation; DNA array technology; DNA profiling; applications of genomics to medicine. Bioinformatics; GWAS; Epigenetics Transgenics: e.g. development of genetically-modified plants, animals, detection of GMO
Module Overview	The aim of this module is to provide you with in-depth coverage of developments in recombinant DNA technology and genomics, using examples from both prokaryotic and eukaryotic systems.
Additional Information	This module provides in-depth coverage of developments in recombinant DNA technology and genomics, using examples from both prokaryotic and eukaryotic systems. Principles, techniques and applications of gene technology are critically reviewed, with emphasis on the implications of genomics for molecular biological research. The module provides the opportunity to develop core skills such as: analysing and solving problems, written and oral communication, initiative, creativity, numeracy, personal planning and organisation, time management, flexible thinking and IT, as well as subject-specific and technical skills.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	50	3	MLO1, MLO4
Essay	Essay	20	0	MLO1, MLO3
Report	Mini-project	30	0	MLO2, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings

Femi Olorunniji	Yes	N/A
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Partner Module Team

Contact Name	Applies to all offerings	Offerings
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