

Liverpool John Moores University

Title: VIRUS INFECTIONS AND CANCER, ANTIVIRAL
CHEMOTHERAPEUTIC AGENTS AND VACCINES
Status: Definitive
Code: **7020NMBMOL** (101596)
Version Start Date: 01-08-2011

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Helen Smalley	Y

Academic Level: FHEQ7 **Credit Value:** 12.00 **Total Delivered Hours:** 7.00
Total Learning Hours: 120 **Private Study:** 113

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Tutorial	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Theory_paper_comprising_8_short_answer-type_and_any_two_from_four_essays._A_minimum_mark_of_40%_is_required_to_pass_the_examination.	30.0	3.00
Essay	AS2	One_assignment_(full_guidance_notes_provided)._A_minimum_mark_of_40%_is_required_to_pass_the_assignment._	70.0	

Aims

To understand the ways in which viral infections may be treated and prevented with particular emphasis on the theoretical principles and practical applications. The need

for different approaches to the control of viral infections in the individual and in populations together with the points of interaction of various antivirals. The principles of evaluation by pre-clinical and clinical trial.

To provide students with a fundamental understanding of the role of viruses as causative agents of cancer, the problems of proving virus-host associations and potentially important newly recognised viruses.

Learning Outcomes

After completing the module the student should be able to:

- 1 critically appraise the problems and different approaches to treating and preventing viral infections
- 2 discuss current antiviral chemotherapeutic agents
- 3 review the principles and applications of antiviral vaccines
- 4 explain and illustrate virological factors preventing effective vaccination
- 5 discuss the current and developing strategies for new vaccines and antivirals
- 6 critically discuss the evidence linking viruses as causative agents of cancer
- 7 discuss the mechanisms by which selected viruses are may initiate malignancy
- 8 critically appraise the potential of newly recognised viral agents to initiate cancerous changes

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	2	3	4	5	6	7	8
ESSAY	1	2	3	4	5	6	7	8

Outline Syllabus

Antiviral chemotherapy - drug design and mechanisms of action
Antivirals against Herpes group viruses (Acyclovir, Famcyclovir, Gancyclovir)
Antivirals against HIV (Zidovudine, ddI, ddC)
Other antivirals (Amantidine, Ribavirin, Foscarnet etc.)
Interferon - activity and mode of action
Problems of resistance and future prospects
Vaccines (Live, attenuated vaccines, inactivated vaccines, sub-unit and synthetic vaccines, recombinant and chimeric vaccines)
Passive immunisation and factors affecting vaccine efficiency (age etc.)
Escape mutants, vaccine breakthrough and vaccine failures
Vector systems (baculoviruses and vaccinia)
The case against vaccination, and future prospects

The difference between transformation, malignancy and metastasis
The role of oncogenes
The interaction of environmental carcinogens and viruses

EBV and Burkitt's lymphoma
Hepatitis B Virus, Hepatitis C Virus and liver cancer
Papillomavirus and cervical cancer
Oncoviruses

Learning Activities

Primary mode by distance learning with tutorial support and assignment feedback

References

Course Material	Book
Author	HPV vaccine and the fight against cervical cancer,
Publishing Year	0
Title	The Lancet Oncology, Volume 4, Issue 9, Page 524 (1. September 2003) Kathryn Senior.
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Book
Author	Combination therapy in the treatment of chronic viral hepatitis and prevention of hepatocellular
Publishing Year	0
Title	carcinoma, International Immunopharmacology, Volume 3, Issue 8, Pages 1169-1176 (August2003)
Subtitle	
Edition	
Publisher	G. Rasi, P. Pierimarchi, P. Sinibaldi Vallebona, F. Colella and E. Garaci.
ISBN	

Notes

Students must achieve an aggregate mark for the examination and coursework of at least 40% with at least a 40% pass in BOTH coursework and examination components.

Only TWO indicative references are provided here. Selected, up to date reviews and other scientific papers are required to complete key distance learning stages and assignments which are regularly updated in the module Guidance Notes. Students are expected to complete their own detailed literature search to support the reference material provided. A critical analysis of the scientific literature is always required.