

SEMESTER I & II
LSM4214 CANCER PHARMACOLOGY

Prerequisite: LSM3211

Workload: 24 lecture hours + 6 tutorial hours + 12 coursework & project hours + 8 self-directed learning hours

Course description:

This module will introduce students to the general principles of drug actions that underpin their therapeutic applications against cancers, from conventional (non-specific) chemotherapy to target-specific drugs. It will provide details of drugs used in specific cancer types, ranging from those with proven efficacy in clinics (e.g. Gleevec) to experimental agents undergoing clinical trials. Conceptual and theoretical targets (e.g. RNAi and gene therapies) will also be introduced.

S/N	Topics	Lecture hours
1	Cancer overview: from biology to etiology and epidemiology	2h (GS)
2	Different cancer types and current treatment methods	2h (GS)
3	Drugs against hormone-related cancer- nuclear receptor and HDAC inhibitors	2h (DH)
4	Growth factors, Receptors and Cancer	2h (EC)
5	Models for drug target discovery and evaluation	2h (EC)
6	Conventional chemotherapeutic drugs and associated toxicities	2h (GS)
7	Cellular Oncogenes/Tumor suppressor genes	2h (GS)
8	Cancer biotherapeutics	2h (CL)
9	Molecular targeted therapies (I)	2h (DH)
10	Molecular targeted therapies (II)	2h (EC)
11	NF-κB signaling in cancer	2h (GS)
12	Cancer pharmacogenomics and personalized medicines	2h (CL)
13	Small group tutorials : topics 1-4	2h (GS/LW)
14	Small group tutorials : topics 5-8	2h (GS/LW)
15	Small group tutorials : topics 9-12	2h (GS/LW)
		Total Lectures: 24 h
		Tutorials & Seminar: 6 h
		Coursework & Project : 12 h
		Self-directed learning : 8 h
		Total hours: 50 h

TEXTBOOKS/REFERENCE TEXTS:

(a) Compulsory reading:

1. Molecular Oncology: Causes of Cancer and Targets for Treatment. [Edward P Gelmann; Charles L Sawyers; F J Rauscher, III], Cambridge University Press, 2014.
2. The biology of Cancer. [Robert A. Weinberg], Second edition, Taylor & Francis Group, 2014.
3. New Approaches in Cancer Pharmacology: Drug Design and Development. Vol II. Paul Workman
Maurizio D'Incalci

(b) Supplementary reading:

1. Cancer chemotherapy and biotherapy: principles and practice / [edited by] Bruce A. Chabner, Dan L. Longo. Philadelphia : Lippincott Williams & Wilkins, c2006
2. Medicinal chemistry of anticancer drugs. Carmen Avendaño and J. Carlos Menéndez. Avendaño, Elsevier, c2008
3. Review articles will be provided for further readings from time to time.

ONLINE RESOURCES:

MedlinePlus on Cancer:

<http://www.nlm.nih.gov/medlineplus/cancer.html>

ASCO All About Cancer:

<http://www.cancer.net/patient/All+About+Cancer>

MODE OF ASSESSMENT:

FINAL EXAMINATION (MCQ & Long Essays)	50%
MID-TERM TEST (Short & Long Essays)	35%
SEMINAR PRESENTATION	15%

MODULE CO-ORDINATOR:

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LECTURERS

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