



Cancer Biology

OBJECTIVE :- The main objective of the Cancer biology is to make the students aware about the onco-genes responsible for cancer, cure and how to prevent these genes growth.

OUTCOMES:- Upon completion of the subject, students will be able to.

- 1.Modulation of cell cycle-in cancer, Different forms of cancers, Diet and cancer.
2. Identification of Oncogenes, Retroviruses and Oncogenes, Growth factors related to transformations.

CONTENTS :

Unit I

Fundamentals of Cancer Biology :Regulation of Cell cycle, Mutations that cause changes in signal molecules, effects on receptor, signal switches, tumor suppressor genes, Modulation of cell cycle-in cancer, Different forms of cancers, Diet and cancer.

Unit II

Principles of Carcinogenesis :Chemical Carcinogenesis, Metabolism of Carcinogenesis, Natural History of Carcinogenesis, Targets of Chemical Carcinogenesis, Principles of Physical Carcinogenesis, X-Ray radiation – Mechanism of radiation Carcinogenesis.

Unit III

Principles of Molecular Cell Biology of Cancer: Oncogenes, Identification of Oncogenes, Retroviruses and Oncogenes, detection of Oncogenes, Growth factor and Growth factor receptors that are Oncogenes. Oncogenes / Proto Oncogenes activity. Growth factors related to transformations.

Unit IV

Principles of Cancer Metastasis: Clinical significances of invasion, heterogeneity of metastatic phenotype, Metastatic cascade, Basement membrane disruption, Three step theory of invasion, Proteinases and tumor cell invasion.

Unit V

New Molecules for Cancer Therapy :Different forms of therapy, Chemotherapy, Radiation Therapy, Detection of Cancers, Prediction of aggressiveness of Cancer, Advances in Cancer detection.

COURSE PROGRAM

1. CLASSES WILL BE OFFLINE
2. 16 HOURS WORKSHOP