

Teaching topics : Molecular Basis of Cancer

Teaching outline :

NEOPLASIA

Essential Alterations for Malignant Transformation

Normal Cell Cycle

Self- Sufficiency in Growth Signals: Oncogenes

Protooncogenes , Oncogenes , and Oncoproteins

Insensitivity to Growth Signals: Tumor Suppressor Genes Evasion of Apoptosis

DNA Repair Defects and Genomic Instability in Cancer Cells

Limitless Replicative Potential:Telomerase

Development of Sustained Angiogenesis Invasion and Metastasis

Invasion of Extracellular Matrix Vascular Dissemination and Homing of Tumor Cells

Molecular Genetics of Metastasis Development

Stromal Microenvironment and Carcinogenesis

Dysregulation of Cancer-Associated Genes

Chromosomal Changes Gene Amplification Epigenetic Changes Molecular Profiles of Cancer Cells

MOLECULAR BASISI OF MULTISTEP CARCINOGENESIS

Tumor Progression and Heterogeneity

Radiation Carcinogenesis

Ultraviolet Rays

Ionizing Radiation

Microbial Carcinogenesis

Oncogenic DNA Viruses

Oncogenic RNA Viruses

Heliconacter pylori