MBS-508: CANCER BIOLOGY 40h

Unit I 12h

Origin and Terminology, Cancer induction, cell transformation, genetic and environmental factors, causes and prevention, benign and malignant tumors, immortalization, metastasis, Characteristic traits, chemical carcinogenesis, Ames test, radiations, oncogenes: viruses & cellular oncogenes, tumor suppressor genes, accumulation of mutations, immune system Evasion.

Unit II 14h

Introduction, Cell cycle progression, control points, Checkpoints, Protein phosphorylation and dephosphorylation, DNA damage, cdk subunits, Hematopoiesis, Apoptosis in normal cell and canecr cells, morphological and biochemical events, tumor suppressor p_{53}, Fas receptor, Caspases, Angiogenesis, oxygen and nutrients supply, activators and inhibitors

Unit III 14h

Chemotherapeutic agents, monoclonal antibodies, radioactive elements, toxic effects on cancerous and normal cells. Role of microorganisms in cancer therapy, Bioprospecting of anticancer molecules from microbial origin, antimicrobial peptides as anticancer agents, antiangiogenic compounds.