

Syllabus

Subject: Molecular Biology

Field of study: Pharmacy

Degree of study: III

Study programme: Medical pharmacology

Form of study: Internal / External

Subject evaluation: Oral exam

Subject type: Compulsory

Department: Department of Medical Biology UPJŠ FM

Lectures and seminar

Basic concepts of molecular biology

- Biomacromolecules
- Replication of Genetic Information
- Cell Cycle, Mitosis nad Meiosis

Structure of genes and gene expression

- Transcription and translation
- Regulation of Gene Expression

Human genome

- Fine Structure of Chromosomes
- Chromosomal Morphology and Human Karyotype
- Cytogenetic Methods

Mutations, gene polymorphisms

- Gene Mutations
- Structural and Numerical Chromosome Mutations

Genetics of cancer

- The Clonal Growth of Cancer Cells
- Genes in Carcinogenesis
- Epigenetic Changes and Cancer

Molecular biology methods in human genetics and clinical practice

- Nucleic Acid Extraction
- Polymerase Chain Reaction
- Electrophoretic Analysis
- Restriction Endonucleases, RFLP
- FISH, DNA microarray
- DNA Sequencing