



Faculty of Medicine

Department II: Microscopic Morphology

University Department Sub-Structure of Medical Genetics

Associate Professor, Position 37

TEMATICS

- Gene-fundamental morpho-functional element of heredity. Gene structure in eukaryotes.
- The chromosomal theory of heredity. Ribonucleic acids. The transcript. The translation. The genetic code. The central dogma of genetics.
- Multiple allele. Types of genes.
- Epigenetic mechanisms involved in gene expression.
- Organization of the human genome.
- The genetic basis of protein synthesis. The gene-protein relationship.
- Mapping and identification of genes on chromosomes. Chromosomal nuclear material. Regulation of gene expression.
- Genetic recombinations. Mutations: definition, classification, molecular basis. DNA damage repair. Mutagenic agents.
- Mendel's laws. The laws of inheritance for monogenic expression. Mechanisms of gene expression in monogenic inheritance. Genetic heterogeneity. Autosomal transmission. Gonosomal transmission.
- Nonclassical inheritance. Peculiarities of monogenic transmission.
- Polygenic, multifactorial heredity. Multifactorial diseases. The twin study.
- Chromosomes - the cytogenetic basis of heredity.
- Chromosomal nuclear material.
- Clinical cytogenetics.
- Chromosomal pathology.
- Syndromes with microdeletions, microduplications.
- Genetic determinism of sex. The pathology of the sexualization process.
- Genetic factors in reproductive failures.
- Diseases due to inborn errors of metabolism. Nutrigenetics. Pharmacogenetics.
- Genetics of the major histocompatibility complex. Immunogenetics.
- The genetic basis of the cancer process. Chromosomal aberrations in malignant hemopathies.
- Elements of teratology
- Possibilities of therapy in genetic diseases.
- Genetics and rare diseases.
- Notions of bioethics applied in genetics.

References

1. Genetică Medicală: Mircea Covic, Dragos Stefanescu, Ionel Sandovici, Vlad Gorduză. Editura Polirom, 2017
2. Curs de Genetică Medicală, Maria Puiu, Dorina Stoicănescu, Cristina Gug, Simona Farcas, Cristina Popa, Andreescu Nicoleta, Emandi-Chirita Adela, Dobrescu Andreea, Editura Eurostampa, 2016.
3. Genetică Medicală: Thompson&Thompson, ediția în limba română, Ed. Hipocrate, 2018