

University: University of Presov in Presov					
Faculty: Faculty of Humanities and Natural Sciences					
Subject code: 2BIO/EROSJCYTC/22			Subject name: Human Cytogenetics		
Method of educational activities: lecture/excercise					
Number of ects: 5					
Semester: Winter					
Degree of study: Master					
Evaluation: Protocols from laboratory exercises Continuous test (30 %) Exam (70 %)					
Education outcomes: Student will be able to define and interpret the basic concepts of cytogenetics, classify the basic types of chromosome aberrations and describe their causes and consequences, characterize the methods used in comparative cytogenetics and perform basic work in the cytogenetic laboratory independently.					
Syllabus: <ul style="list-style-type: none">• Introduction to cytogenetics.• The mitotic cycle. Cell division. Spermatogenesis and oogenesis.• Morphology of chromosomes. Karyotype. Cytogenetic terminology.• Human cytogenetics. Chromosome aberrations. Numerical chromosome aberrations, structural chromosome aberrations – clinical importance. Fragile sites, chromosome instability syndromes.• Conventional methods of cytogenetic analysis. Cell culture techniques. Banding methods, chromosome bands (G-banding, C-banding, Q-banding, R-banding). Cytogenetic nomenclature.• In situ hybridization. FISH, CGH techniques.• Prenatal cytogenetic diagnostics, oncocytenetics.• Mapping of human chromosomes. The future of human cytogenetics.					
Excercises: <ul style="list-style-type: none">• Conventional methods of cytogenetic analysis: karyotyping of human chromosome (G-banding, C-banding)• Microscopic visualization of Barr body – screening method.• Cytogenetic analysis of chromosome aberrations, cytogenetic notation.					
Literature: <ol style="list-style-type: none">1. Roy: Cytogenetics. 2009, ISBN-13: 978-18426548732. MacGregor, J. M.: An introduction to animal cytogenetics.1993, ISBN-13: 978-04125460063. Fan Y.-S.: Molecular Cytogenetics: Protocols and Applications (Methods in Molecular Biology). 2010, ISBN-13: 978-1617373008					
Language: english					
Evaluation of subject:					
A	B	C	D	E	FX

Teacher: doc. RNDr. Iveta Boroňová, PhD.
Date of last change: 30.04.2024