

CONTENT OF THE SUBJECT

Subject:	Molecular Pathophysiology		
Study	<i>General Medicine</i>	Study Period:	<i>6th and 8th semester</i>
Evaluation:	<i>Graduated (exam)</i>	Subject Type:	<i>Elective</i>
Content:	<i>2 h. lectures/each even week</i>		<i>Total 14 hours/semester</i>

Department of Pathological Physiology, UPJŠ FM

Week	Lectures https://portal.lf.upjs.sk/index-en.php
2.	Molecular endocrinology I: principles of humoral intercellular signalling; endocrine/ neuroendocrine, paracrine/ neurocrine, synaptic, distant and contact forms; forms of receptors
	Molecular endocrinology II: common intracellular signalling cascades, G-proteins, kinases, phosphatases, transcription factors
4.	Molecular endocrinology III: disorders of humoral signalling; secretory disorders, receptor defects, post-receptor disorders
	Molecular endocrinology IV: gain/-loss in function feedback defects; common neurotransmitter defects; syndromes of hormonal resistance
6.	Disorders of ion channels and selective transport defects I: common potassium, sodium, calcium and chlorine channelopathies
	Disorders of ion channels and selective transport defects II: defects of glucose transporters, amino acid transport, neurotransmitters, gut and liver transport systems
8.	Oxidative stress and oxidative tissue damage I: reactive forms of oxygen (ROS); mechanisms of antioxidant protection
	Oxidative stress and oxidative tissue damage II: ROS in cellular signalling; parameters of oxidative stress
10.	Pathophysiology of gene expression I: pre-translational and post-translational disorders; epigenetic mechanism; miRNA
	Pathophysiology of gene expression II: chaperon/ chaperonins; protein folding disorders; insoluble aggregates; defects in intracellular protein transportation
12.	Molecular basis of inflammation and healing I: humoral mediators- blood –derived, cell-derived; cytokines - chemotaxins, lymphotactins, interleukins, transmigration-adhesive molecules
	Molecular basis of inflammation and healing II: Healing process: formation of granulation tissue, neovascularisation, epithelisation
14.	Molecular carcinogenesis I: oncogenes; tumor suppressor genes; metastasis suppressor genes; telomeres; home keepers
	Molecular carcinogenesis II: angiogenesis, metastatic tumorigenesis Final evaluation. Exams. Credits