

Topics for Pathological biochemistry

(knowledge in the scope of Pathological biochemistry and Pathophysiology lectures)

- 1) Mechanism of cell injury
- 2) Oxidative stress and antioxidant protection
- 3) Biochemistry of inflammation
- 4) Biochemistry of tumors
- 5) Physiological and pathological biochemistry of lipids
- 6) Physiological and pathological biochemistry of carbohydrates
- 7) Physiological and pathological biochemistry of nitrogen-containing compounds
- 8) Hereditary disorders of amino acid metabolism
- 9) Pathological biochemistry of nervous system – degenerative diseases
- 10) Physiological and pathological biochemistry of nucleic acids, purines and pyrimidines
- 11) Physiological and pathological biochemistry of porphyrins
- 12) Pathological biochemistry of hormonal regulation

Topics for Xenobiochemistry

(knowledge in the scope of Xenobiochemistry lectures and Moodle course Xenobiochemistry

[Kurz: Xenobiochemistry | DL 1\)](#)

- 1) Xenobiotics – overview, toxicity and fate in organism
- 2) Biotransformation study, structure and metabolism relationship
- 3) Cytochromes P450
- 4) Flavin monooxygenases and other oxidation enzymes
- 5) Xenobiotic reductases
- 6) Xenobiotic hydrolases
- 7) Conjugation enzymes
- 8) Transport systems for xenobiotics
- 9) Factors affecting drug metabolism
- 10) Induction and inhibition of drug-metabolizing enzymes
- 11) Genetic polymorphism
- 12) Epigenetic regulation of drug-metabolizing enzymes and drug transporters
- 13) Extrahepatic and microbial biotransformation
- 14) Drug interactions, drug resistance
- 15) Metabolism of xenobiotics in plants