

Practice 3

Cytology II

1. What is the chemical composition of glycogen? What are the structural forms of glycogen in human cells? Are these forms specific for different cell types?
2. Are the lipid droplets embedded by a membrane? What are the structural forms of lipid droplets in white and brown adipose tissue? Are there any other cells than adipose rich in lipid droplets?
3. What are the types of cytoskeletal fibers? Describe their structure and dynamics of their assembly. What proteins form the cytoskeletal fibers?
4. Provide an example of cellular functions or events dependent on cytoskeleton.
5. What types of intercellular junctions are found in human cells? Do any of them associate with the cytoskeleton?
6. What is the structure and function of communicating junctions (gap junctions, nexus)?
7. What surface domains are recognized on epithelial cells? What does the term “apico-basal polarity” mean?
8. What is the structure, localization and function of microvilli, kinocilia and stereocilia? What type structure is the “primary cilium”? What is its function?
9. What is the structure and function of basal labyrinth? What cells do usually contain basal labyrinth?
10. What is the structure and function of basal lamina? What is the difference between basal lamina and basement membrane? What cells participate in formation of the basement membrane?

Recommended study materials: Presentations from practices and lectures, Atlas of Histology (online), Atlas of Cytology and Embryology (online), Junqueira's basic histology.