

EXPERIMENTAL ONCOLOGY

QUESTIONS FOR EXAMINATION OF STUDENTS

Lessons 1-2

Brief answer

1. Give a definition of Cancer
2. Can a benign tumour lead the patient to death ? In which particular cases it may happen (if) ?
3. What is the meaning of 'carcinoma *in situ*' ?
4. Give a definition of POLYP and explain in which tissue/organs it can be formed and found
5. Give a definition of Teratoma
6. What is a leiomyosarcoma ?
7. What is a medulloblastoma ?
8. What are the main routes of metastatic dissemination ?
9. What is a rhabdomyoma ?
10. What are the names of a benign and malignant tumours of an epithelial gland ?
11. What is based on the TNM staging ?
12. What defines the GRADING I to IV of a tumour ?
13. In the chemical carcinogenesis process, the substance indicated as INITIATOR is the one that causes the, while the substance indicated as PROMOTER is responsible for inducing

Long answer

14. Give a definition of the followings: Hyperplasia, Metaplasia, Dysplasia, Anaplasia, Neoplasia
15. List the hallmarks of cancer cells
16. List the main differences between benign and malignant tumours at histologic/macrosopic level
17. List the main differences between benign and malignant tumours at cellular level
18. List the clinical manifestations in a patients bearing a malignant cancer
19. Define what is the stroma (what is made up of) and briefly explain what is its role in cancer progression
20. What are the general criteria for the nomenclature of epithelial benign and malignant tumours ?

Lessons 3-4

Brief answer

1. List the main metabolic alterations (which pathways are affected) that can be found in a cancer cell.
2. What is the 'Warburg Effect' ? (in which cells it occurs ? what is the functional consequence ?)
3. What are the main signalling pathways (driven by oncogenes and oncosuppressors) involved in the Warburg Effect ?
4. How is the Warburg Effect linked to the Fatty acid synthesis ?
5. Which aminoacid metabolism is affected in cancer cells because of the Warburg Effect (what is the biochemical link) ?

6. What is the role of mitochondria in cancer ? (in which pathways it is involved)
7. What is the role of Lysosomes in cancer (in which pathways it is involved)
8. What is the function of BCL-2 proteins ?
9. How p53 regulates apoptosis and autophagy ?
10. Describe briefly the types of cell death

Long answer

11. What is the function of autophagy in Cancer development and progression
12. How is autophagy regulated by oncogenes (which ?) and oncosuppressors (which ?) ?
13. What are the main pathways leading to apoptosis (triggers, mediators)
14. What are the molecules involved in the cross-talk between autophagy and cell death
15. What is the involvement of mitochondria in cell death (in which signalling pathway)
16. What is the involvement of lysosomes in cell death (in which signalling pathway)