

SEMEY STATE MEDICAL UNIVERSITY  
THE DEPARTMENT OF PATHOLOGICAL PHYSIOLOGY



# SIW

Discipline: PATHOLOGICAL PHYSIOLOGY

Theme: «Biological characteristics of tumor grows, types of atypism, similarity and difference of tumors»

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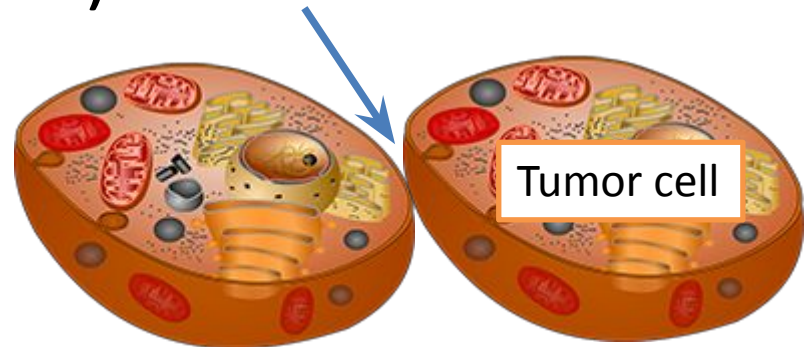
Semey  
2018

# Plan

- Introduction
- Infinity of growth
- Autonomy of growth
- Infiltrating growth
- The ability to metastasize
- Atypism of tumor cells
- Clonal growth
- Tumor progression
- Conclusion
- Literature

# Infinity of growth

Redundant proliferation of tumor cells due to the lack of contact inhibition of division («Hayflick barrier»)

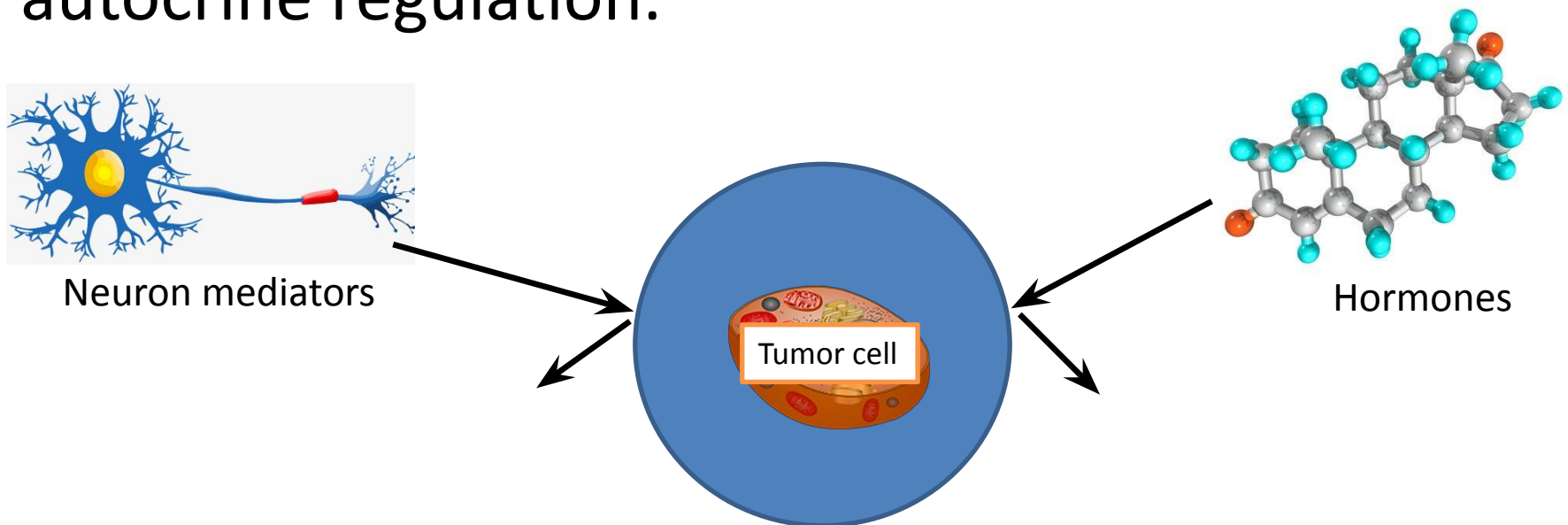


Antioncogens  
P53  
are inactivated

Αποπτο

# Autonomy of growth

The tumor cell is protected from the neuro-humoral effects of the body thanks to autocrine regulation.



# Infiltrating growth

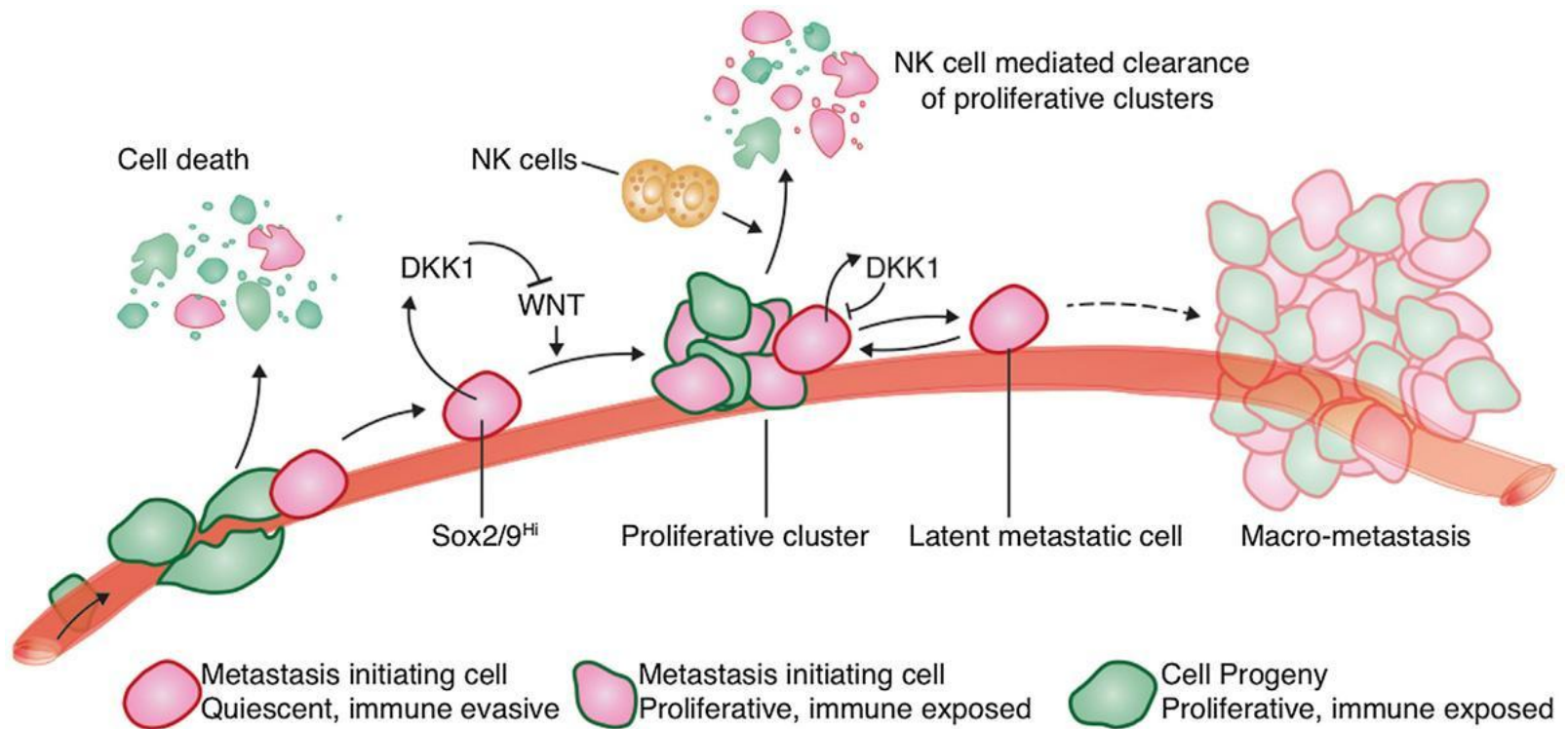
Germination in the surrounding tissue with their destruction.

In addition, the tumor cell takes from normal cells vitamins, glucose, nitrogen, etc.



# Metastasis

The appearance of secondary lesions far from the primary lesion by lymphogenous and hematogenous



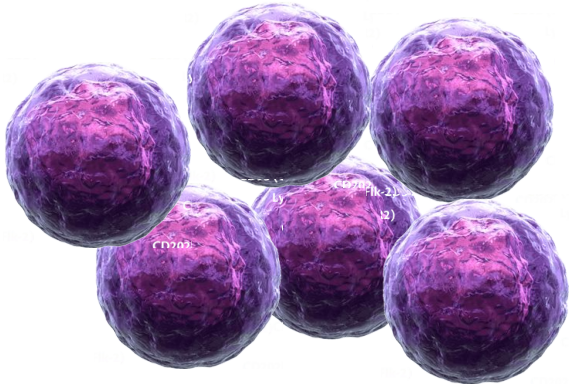
# Atypia of tumor cells

These are features of the structural and functional organization of tumor cells, creating similarities with embryonic cells and distinguishing them from normal original cells.

Types of atypia:

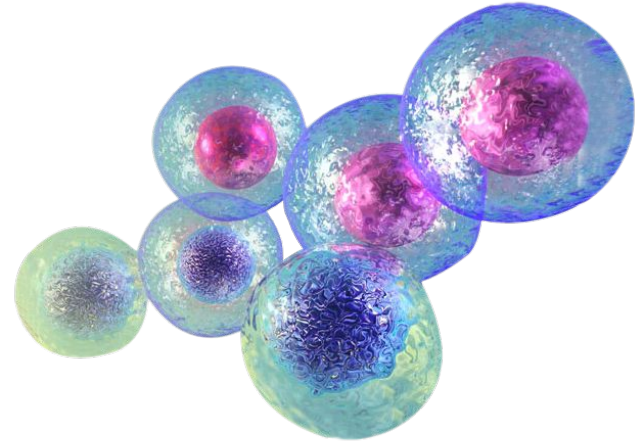
1. Morphological;
2. Biochemical;
3. Functional;
4. Immunological.

# Clonal growth



Monoclonal growth

One general genotype and phenotype



Polyclonal growth

gene P53 is suppressed



Mutations



Different genotype and phenotype



# Tumor progression

Irreversible qualitative change in one or more properties of neoplasia, directed upwards with at least some differences between normal and neoplastic tissue

Independent progression of different tumors in one organism

Independent progression of different properties of the same tumor

Progression does not depend on growth

It can be hopping, gradual

It has several alternative ways



The absence of any rules allowing to prognose process and outcome

# Conclusion

Based on the foregoing, despite the fact that we have considered only a small part of the features of tumor growth, due to the difficulty of predicting the course and outcome of tumor growth, this topic is relevant and we need to continue to explore this topic further to find ways to treat cancer patients.

# Literature

- Pathophysiology. V. Novitskiy, O. Urazova. 2010. 799-812 pages;
- Pathologic basis of disease. Robbins. 1999. 260-328 pages;
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1303573/>
- <https://images.google.com/>