BIO-472

Cancer biology II

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Cursus	Sem.	Type
Life Sciences Engineering	MA2, MA4	Opt.

Language of teaching	English
Credits	5
Session	Summer
Semester	Spring
Exam	During the semester
Workload	150h
Weeks	14
Hours	**5 weekly**
Lecture	3 weekly
Exercises	2 weekly
Number of positions	

Summary

The course covers in detail the interactions of cancer cells with their environment with an emphasis on tumor-angiogenesis, inflammation, adaptive and innate immunity and cancer-induced immune suppression. Additional topics are cancer metabolism, cancer stem cells and metastasis.

Content

The 2x5 credit course Cancer Biology I+II starts in the winter semester and continues throughout the summer semester.
Cancer Biology II covers:

- complex oncogenic signaling networks and hierarchical tumor organization
- tumor metabolism
- cell death signaling and apoptosis
- cancer histology with pratical training

- inflammatory signaling in cancer
- tumor angiogenesis
- tumor cell dissemination and metastasis
- innate immunity: pro-tumorigenic roles of inflammation, NK cells
- adaptive immunity: immuno editing, immune evasion, immunotherapy

The weekly lectures will be followed by exercises. The task for these exercises will be student presentations of scientific articles which illustrate the course in order to consolidate the knowledge of the course topics.

Learning Prerequisites

Recommended courses

Cancer Biolgy I
Immunology

Assessment methods

Continuous evaluation during the semester with two intermediate exams

Resources

Bibliography
The Biology of Cancer, Robert A. Weinberg

Ressources en bibliothèque
- The Biology of Cancer, Robert A. Weinberg

Moodle Link
- https://go.epfl.ch/BIO-472