

## Module 10-2 Tumor biology

### Content and goals of the module

#### Part A

**Lectures** will introduce you to the hallmarks of cancer, the molecular mechanisms underlying its development and progression, the current therapies:

*Origin of cancers and evolution*

*Genomic instability in cancer*

*Chromatin regulation and its deregulation in cancer*

*Immunometabolism - principles and perspectives*

*Tumor virology and Cell death*

*Systems Biology of cancer (theory & application)*

*Local immune response in cancer*

*Tumor immunology & immunotherapy*

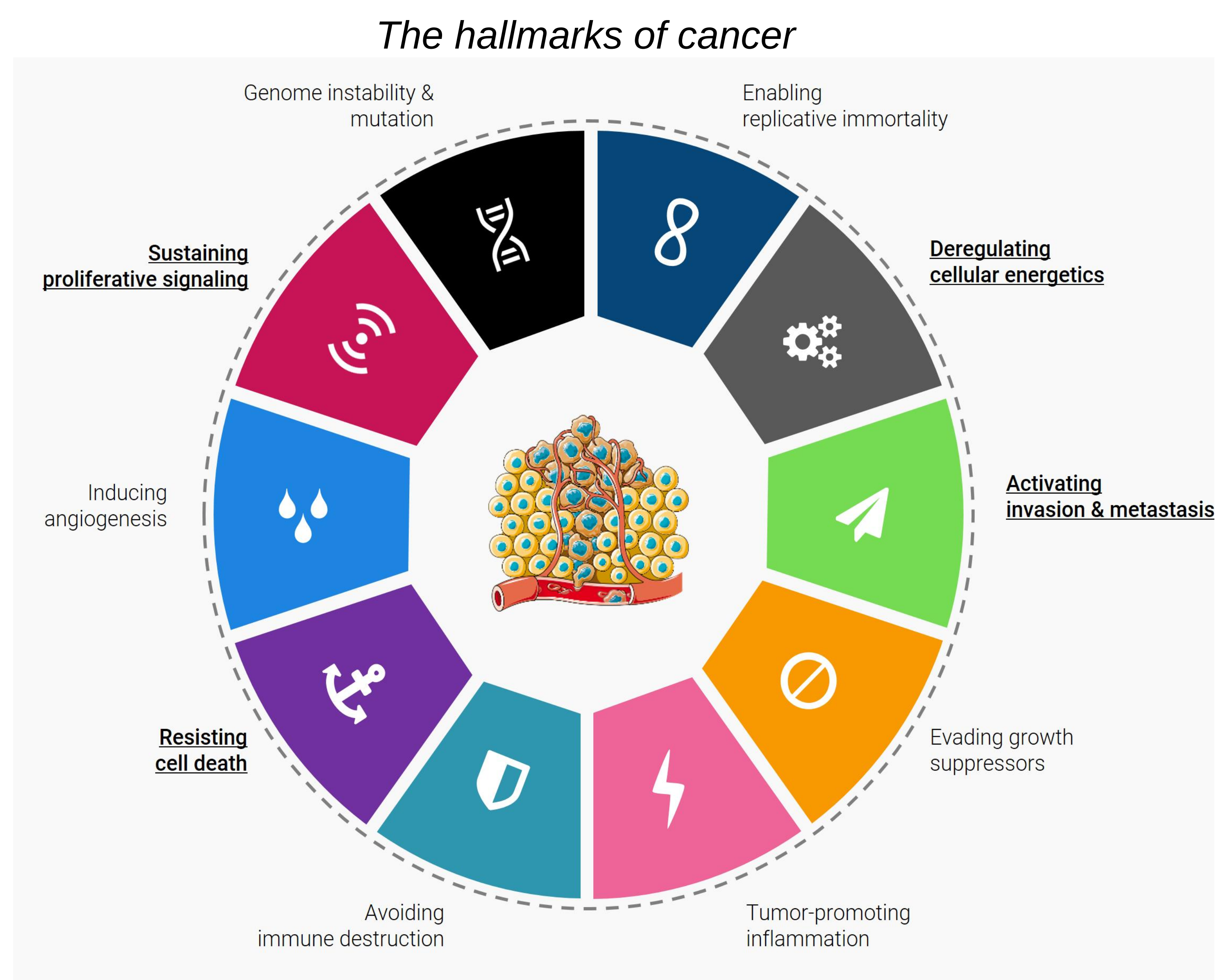
*Cancer immunotherapy/Brain metastasis*

*mRNA therapeutics and vaccines for cancer treatment*

*Molecular diagnostics and personalized therapy of cancer*

*"Conventional" Tumor Therapies and current trends*

**Seminars** will allow you to deepen your knowledge on methodological and theoretical aspects of tumor biology by presenting and discussing scientific articles.



<https://www.genosciencepharma.com/genoscience-approach/>

A **two-week practical** at the laboratory will introduce you to molecular and cell biology methods and models of analysis, for instance: cell culture, gene expression (quantitative PCR), protein expression (immunoblot or flow cytometry), bioassays (cell invasion/proliferation/death).

#### Part B

You will apply the knowledge you will have acquired in Part A in a **6-week Lab-internship** to be completed at the laboratory of the lecturers.

#### Part C

**Lectures** and **Seminars** of Part A will introduce you to various aspects of tumor biology and allow you to deepen your knowledge through the presentation and discussion of scientific articles.

#### Target group:

Students of the 1st – 3rd Semester MSc Biology

#### Frequency / Number of participants:

Winter Semester

8 students (A/B) & 20 students (C)

#### Credit point requirements: A/B

- ✓ Lectures: final written examination (pass the examination if > 50% of the points)
- ✓ Practical course: internship-report in the style of a scientific publication and oral presentation (graded)

#### Organiser\* and Lecturers

Dr. Anne Régnier-Vigouroux\* (IDN, FB10), Dr. Carsten Geiß (IDN, FB10), Dr. Ella Kim (FB4), Dr. Daniela Kramer (FB4), Prof. Volker Mailänder (FB4, MPIP), Prof. Rodrigo Mora (University of Costa Rica), Prof. Vassilis Roukos (IMB & University of Patras, Greece), Dr. Sandra Schick (IMB), Prof. Lisa Sevenich (University of Tübingen), Dr. Julia Varga (IMB), Dr. Mathias Vormehr (BionTech, Mainz).

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