

Course information

Tumor biology; the driver of drug development

2 – day course

This course will give you a structured overview of the present understanding of tumor biology, the biological mechanisms underlying tumor initiation, growth and progression, and of recent and emerging cancer drugs.

Purpose and goal

The two main goals are to:

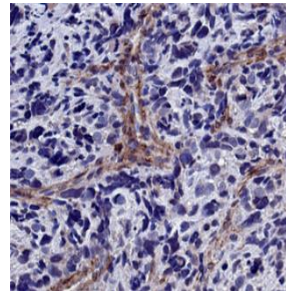
- provide an overview of the biological mechanisms that underlie cancer initiation, growth and metastasis
- review novel cancer drugs which, during the last 10-15 years, have been developed based on this improved understanding of cancer biology. The overriding theme of the course is how drug development and clinical research is grounded in tumor biology.

The course will provide participants with a serviceable conceptual framework that will support well-informed evaluation of novelty and significance of emerging findings in the areas of tumor biology and drug development.

Target group

The course is directed towards professionals involved in development, marketing or consulting regarding cancer drugs. Some basic knowledge of cell biology is recommended, whether from academic training or professional experience from the oncology subfield of pharmaceutical companies, or both.

Previous attendees of the course *Basic oncology* who want to go deeper into the molecular aspects are also welcome.



“Tumor biology is the well from which novel cancer drugs spring”

– Professor Arne Östman, course leader

Course teachers

The course will involve active researchers representing leading national expertise in tumor biology and clinical research, providing complementary perspectives on how biological research can be transformed to novel treatments.

Teachers include:

Prof. Arne Östman, PhD (tumor microenvironment)

Ass. Prof. Maria Shoshan, PhD (cancer metabolism)

Ass. Prof. Andreas Lundqvist, MD, PhD (tumor immunology)

Prof. Rolf Kiessling, MD, PhD (tumor immunology)

Ass. Prof. Charlotte Rolny, PhD (tumor microenvironment)

Ass. Prof. Johan Hartman, MD, PhD (molecular pathology)

Prof. Janne Lehtio, PhD (omics of clinical samples)

Prof. Lars Holmgren (anti-angiogenic drugs).



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Course content

The tumor biology part of the course will give an overview of present understanding of the biological mechanisms underlying tumor initiation, growth and progression and will cover concepts such as

- oncogenes/tumor suppressor genes
- cancer stem cells
- dysregulated cancer metabolism
- cancer immune surveillance and tumor microenvironment.
- Attention will also be given to the large heterogeneity occurring inside individual tumors, between different tumors, and between primary tumors and matching metastases.

The part on novel cancer drugs will cover

- molecular mechanism of action
- therapeutic efficacy,
- resistance mechanisms and biomarkers

Drug classes that will be discussed include

- kinase inhibitors targeting malignant cells
- PARP-inhibitors
- anti-angiogenic drugs and immune-modulatory antibodies

Course outline

The course will consist of lectures and seminars as well as some online course literature accessible on a web portal. The course format will encourage direct and informal interactions between participants and lecturers.

The course is provided in a larger context that recognizes the potential of novel collaborative formats between academic and company-driven cancer research.

When and where

Please contact us for more information.

Fee and application

Please contact us for more information.

For more information, please contact

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Karolinska Institutet is one of the world's leading medical universities. Its mission is to contribute to the improvement of human health through research and education. Karolinska Institutet accounts for over 40 per cent of the medical academic research conducted in Sweden and offers the country's broadest range of education in medicine and health sciences. Since 1901 the Nobel Assembly at Karolinska Institutet has selected the Nobel laureates in Physiology or Medicine.

Karolinska Institutet Contract Education delivers competence development for municipalities, governments and businesses and works for development in healthcare and a healthier society.