

Title of module

Advanced Practical in the Focal Point Program:
"Molecular Medicine" VZ: 185881
"Cancer Stem Cells and Molecular Oncology"

Credit points

7.5
(of 15)

Available in semester(s)

2

Hours per week

9

Compact course



Lecturer(s)

D. Strumberg and teaching assistants

Teaching methods

A five-week all-day practical lab course with a compulsory seminar presentation.
Please note: A second Advanced Practical will have to be performed in the same semester to earn the full complement of 15 credits

Evaluation of learning progress

Active participation, feedback during independently performed experiments, project discussions with the supervisor

Mode of examination

Assessment of experimental skills during the practical (50%), a written project report (40%), and a seminar presentation of experimental results (10%).

Learning objectives

The students can improve their theoretical background, as well as their technique for detection and phenotypic/molecular characterization of cancer stem cells (CSC); they learn how to understand own experimental results in the context of what is known in the research field; to learn how to plan and conduct an experiment: goals, methods, discussion of results. A small project will be assigned to

Soft skills

Writing a protocol for a research study; correct and specific scientific wording; presenting own research results or publications with PowerPoint; understanding, presentation and discussion of scientific publications

Contents of module

Molecular, biochemical, and cell biological experimental techniques to study stem cells in cancer - and in leukemia cell lines as well as in cells with stem-cell like phenotypes

Methods, that can be learned:

1.- Cell culture and isolation of CD34+ cells from whole blood and leukemia cell lines

2.- Phenotypic characterization of cancer stem cells by FACS analysis

3.- Characterization of cancer stem cells by immunocytochemical methods (ICC)