



INSTITUTE OF BIOMEDICINE

SB00031 Liquid biopsy analysis in cancer, 1.5 credits

Vätskebiopsianalyser inom cancer, 1,5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Council for PhD Education at Sahlgrenska Academy on 2022-03-09, and is valid from Autumn semester 2022.

Responsible Department

Institute of Biomedicine, Sahlgrenska Academy

Entry requirements

Admitted to postgraduate education

The course is open for PhD students accepted by a Swedish or international university.

In order to apply for the course you should have a background in genetics, molecular biology, cell biology, tumor biology, biochemistry or similar

Learning outcomes

After completing the course the PhD student is expected to be able to:

Knowledge and understanding

- *Explain the difference in analyzing tissue biopsies and liquid biopsies*
- *Describe the potentials and limitations of different analytical tools to study liquid biopsies*
- *Discuss the use of liquid biopsy analysis in cancer diagnostics*

Competence and skills

- *Ability to plan preanalytical steps and liquid biopsy analysis*
- *Ability to design and perform biomarker analysis using liquid biopsies*

- *Justify the use of liquid biopsy analysis within cancer diagnostics*
- *Apply their background knowledge in liquid biopsy analysis within new applications areas*

Judgement and approach

- *Assess the eligibility of applying liquid biopsy analysis in reported studies*
- *Judge the clinical value of liquid biopsy analysis in cancer diagnostics*

Course content

The development of ultrasensitive technologies enable the detection and quantification few analytes in complex matrices, such as liquid biopsy. In cancer management and research, liquid biopsy analysis can be used in screening, diagnostics, monitoring treatment efficacy as wells as early detection of minimal residual disease and relapse. This course outline the potentials and limitations of liquid biopsy analysis in cancer management. Practical and theoretical aspects of sampling, preanalytical steps, biomarker analysis, data analysis and clinical interpretation will be included within the application areas of cancer. We have a specific focus on DNA and RNA analysis, as well as on clinical utility. The course will be given in a digital format, including lectures and group discussions

Types of instruction

The course is given in digital format, requiring computer access and internet, since all content, communication and relevant documents, such as lectures, exercise and literature, will be posted at CANVAS.

Language of instruction

The course is given in English.

Grades

The grade Pass (G) or Fail (U) is given in this course.

The grades are Pass or Fail.

Types of assessment

All course parts are compulsory (lectures and group discussion). Final grade will be based on group work and written report after the course. If the student miss obligatory moments, they can be replaced with written assignments. A student who has failed a test twice has the right to change examiners, if it is possible. A written application should be sent to the institute.

Course evaluation

The course evaluation will be done through a written questionnaire, where students are asked to describe their opinions on the various stages of the course for future development. This

information will be compiled and shared with students who participated in the evaluations. Improvements will be shared with students participating in the next emission of the course.

Other information

Students are expected to read and be aware of the university's policies regarding plagiarism. These policies can be found at <http://www.ub.gu.se/skriva/plagiering>. Plagiarism will not be tolerated and suspected cases of plagiarism will be reported to the university disciplinary committee.