

BIO-614

Practical - Antanasijevic Lab

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Cursus	Sem.	Type
Molecular Life Sciences		Opt.

Language of teaching	English
Credits	1
Session	
Exam	Project report
Workload	30h
Hours	24
Courses	6
Exercises	2
TP	8
Project	8
Number of positions	4

Frequency

Every year

Remark

Open to max. 4 students. 3-day block course, every year in January. To register, contact EDMS Administration

Summary

The students will learn: 1) how to handle viral protein antigens and antibody samples 2) how to assemble and purify immune complexes using liquid chromatography 3) how to image them on an electron microscope

Content

Structural analyses of antibody-antigen complexes are essential for understanding the molecular mechanisms underlying the recognition and antibody-mediated inhibition of viral pathogens.

Through this course, the students will learn the basics of viral antigen handling, purification of antibody-antigen complexes and their characterization using electron microscopy (EM).

The key practical skills that students will get introduced to are liquid chromatography, preparation of EM grids and collection of data on the microscope.

Note

Please note that you cannot register in your own group Practical!

Note that 3 practical courses are mandatory for all EDMS students and that they have the priority; each course has between 2 to 4 possible slots.

Therefore, please do not register by yourself to this course, this will be done by the EDMS program administrator

Keywords

Virus, antigen, antibody, electron microscopy, structural biology

Learning Prerequisites**Required courses**

No prerequisites

Learning Outcomes

By the end of the course, the student must be able to:

- understand the fundamental concept of the performed experiments and to communicate their outcome.

Assessment methods

Project report

Resources

Websites

- <https://www.epfl.ch/labs/antanasijevic-lab/>
- <https://cryo-em-course.caltech.edu/>

Moodle Link

- <https://go.epfl.ch/BIO-614>