The Hebrew University of Jerusalem

Syllabus

Strategies in protein purification and characterization - 92632

Last update 03-03-2025

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Structural & Molecular Biochemistry

Academic year: 0

Semester: 2nd Semester

Teaching Languages: English and Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr. Hadar Amartely

Coordinator Email: hadar.amartely@mail.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:
Dr. Hadar Amartely,
Prof. Oded Livnah

Course/Module description:
Different methods in protein separation and purification, protein analysis and characterization and quantitative methods in protein interactions.

Course/Module aims:
Provide basic knowledge in protein separation for students that protein production and purification is necessary for their research.

Learning outcomes - On successful completion of this module, students should be able to:
1. Design a purification procedure for different proteins according to the properties of a protein, combining varied purification methods.
2. Choose and design analytical methods for protein characterization. 3. Design binding assays using different biophysical methods

Attendance requirements(%):
100%

Teaching arrangement and method of instruction: Frontal

Course/Module Content:
Strategies in Protein purification and development of a protocol. Selection and combination of purification techniques.
Application of protein purification and scales of purification.
FPLC system, classical chromatography methods (e.g IEX, SEC, HIC, affinity and mixed mode). Basis for selectivity, optimization of purification procedure. Protein quality control and characterization:
Monitoring problems of aggregation. Protein refolding.
Methods for studying protein interactions.

Required Reading:
Selected papers and handbooks

Additional Reading Material:

None

Grading Scheme:

Additional information:

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