

Graduate Program in Molecular Cell Biology and Oncology:

Special Lecture/Course in: Protein affinity purification and mass spectrometry

Lecturer: Stasyk, Taras; Schmidt, Oliver

Number:

Type: VO ECTS: 1

Character:

Time/Date: tentatively scheduled for week 45 (5.-9. November 2018)

Location: CCB, Cell biology

Limited number of places YES, number of places 5 , registration necessary YES

For registration or questions please contact taras.stasyk@i-med.ac.at or oliver.schmidt@i-med.ac.at

Aim:

Introduction into commonly applied methods for affinity purification of proteins/protein complexes from biological sources and protein mass spectrometry

Description/contents:

The course will give a broad overview on methods and application for the affinity-based isolation of proteins/protein complexes from all kinds of biological sources for analytical and preparative purposes. Also Tagging strategies, choice of expression hosts, membrane protein isolation/detergents and multi-step purification strategies will be discussed. In addition the course offers an introduction into biologically relevant mass-spectrometry applications.

The participants will affinity-purify a recombinantly expressed protein, follow the purification procedure and estimate purity by SDS-PAGE, test their purified sample with a functional assay, and identify the main proteins in the elution sample by mass spectrometry.

Applied techniques: Glutathion-S-transferase affinity purification, elution by thrombin cleavage, SDS-PAGE, Bradford assay, FPLC/size exclusion chromatography, sample preparation and tryptic digestion for mass spectrometry; MALDI-TOF MS

Suggested reading:

Bioanalytics - Lottspeich (Ed.); tba