

UGA Excellence Internship Program : IBS project

Missions

The primary sequence and post-translational modifications (PTMs, such as glycosylation) of proteins influence their structure and function, tuning their actions in key cellular processes. The MS laboratory at the Institut de Biologie Structurale (IBS) aims to characterise proteins and their PTMs using mass spectrometry (MS). MS can assess the mass of biomolecules with high accuracy, sensitivity and rapidity. One of our mass spectrometer allows us to determine the mass of intact proteins and to determine type, number of their PTMs with high accuracy and sensitivity.

Knowledge and research skills

The student will learn how to analyse intact proteins using ESI-TOF instrument coupled with Reverse Phase Liquid Chromatography. To do that, she/he will perform calibration of the mass spectrometer and routine maintenance (such as the weekly cleaning of the ESI needle). The student will learn how to prepare the samples and how to eject them into mass spectrometer. He/she will be trained to do data management and bioinformatics processing.

Conditions

Time schedule : 9.30-16.30

IBS MS laboratory: room 159

Instrument: Liquid Chromatography-Electrospray (ESI)- time-of-flight (TOF), Agilent

Working language: English and French

To know more about the subject

Boeri Erba E, Signor L, Oliva MF, Hans F, Petosa C. Methods Mol Biol. 2018;1764:133-151. Characterizing Intact Macromolecular Complexes Using Native Mass Spectrometry doi: 10.1007/978-1-4939-7759-8_9