

**Sujet de stage de Master 2 (1 page max.)**

**Laboratoire:** Institute of Structural Biology (IBS)

**Directeur :** Winfried Weissenhorn

**Intitulé de l'équipe :** Epigenetics and molecular pathways Group, MS laboratory

**Responsable :** Carlo Petosa

**Nom et Qualité du Responsable du Stage :** Boeri Erba Elisabetta

**HDR oui**

**Adresse :** 71 Avenue des Martyrs, 38044 Grenoble cedex 9

**Tél :** 0457 42 8574 **email :** [elisabetta.boeri-erba@ibs.fr](mailto:elisabetta.boeri-erba@ibs.fr)

**Parcours de Master 2 (*Rayer la/les mention(s) inutile(s)*) :**

Chemistry for Life Sciences (CLS)

**Titre du sujet :**

Characterizing antibodies using mass spectrometry

**Objectifs visés du stage (5 lignes max) :**

This project aims to use different mass spectrometers for investigating intact antibodies.

**Intérêts pédagogiques et compétences visées (5 lignes max) :**

The project should appeal to students with a background in chemistry, who are interested in biological and analytical chemistry and its application to answer biological questions.

**Résumé :**

The primary sequence and post-translational modifications (PTMs) of antibodies influence their structure and function. The IBS MS laboratory aims to characterize antibodies and their PTMs using mass spectrometry (MS). MS can assess the mass of biomolecules with high accuracy, sensitivity and rapidity. The MS lab has two mass spectrometers, which allow us to assess the mass of intact antibodies, to sequence these proteins and to determine type, number and position of their PTMs.

**Approches & matériels utilisés (5 lignes max) :**

The student will analyse antibodies before and after digestion with IdeS Protease. She/he will use a MALDI-TOF/TOF, and an ESI-Q-TOF to analyse antibodies. She/he will assess the performances of the two different instruments in terms of sensitivity, resolution, m/z range and sequence coverage.

**Domaines de compétences souhaitées du candidat (3 lignes max):**

Analytical chemistry, biochemistry

**Dates du stage :** 09.01.2023-30.06.2023