**M2 internship proposal in HRMS metabolomics: application of molecular network analysis methods for the identification of metabolites in rosé wine and oilseed rape seeds**

**Location**: The 6-month internship will take place on the site of the Faculty of Pharmacy and Medicine of La Timone, in Marseille

**Description**: Methods for identifying unknown metabolites have recently undergone considerable development, using computational methods to automatically compare the mass spectra of known compounds to those of unknown metabolites; These methods also make it possible to follow the biotransformation of known metabolites by cellular systems.

The GNPS online tool (https://gnps.ucsd.edu/ProteoSAFe/static/gnps-splash.jsp) thus makes it possible to build molecular networks gradually aggregating metabolites whose structure is similar, and thus makes easier to identify unknown molecules. In addition, the use of tools like MZmine and SIRIUS makes it possible to speed up their annotation.

The proposed internship project will be to implement this data processing technology from mass spectrometry data already gathered for two projects:

The first project consisted of analyzing rosé wines from Provence and comparing them to competing products;

The second project consisted of analyzing bioactive compounds present in rapeseed feed, then monitoring the biotransformation of these bioactives in the milk of cows that consume them, and in the blood and urine of mice to whom the milk of these cows was administered.

**Skills acquired**: metabolomics, mass spectrometry, identification by molecular networks, study of biological biotransformations, analytical chemistry.

**Profile**: M2 in analytical chemistry, in biochemistry; attraction for computer work.

**Remuneration**: according to the regulatory grid (approximately €450 net monthly).

**Contact and support**:

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