



POST-DOC POSITION

Development of a coupling interface between capillary electrophoresis and ion mobility mass spectrometry for the analysis of glycopeptides

Host Institution: Institut des Biomolécules Max Mousseron, UMR 5247 (UM CNRS ENSCM),
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Context: The Post-doc position is granted by the Agence Nationale de la Recherche (ANR) for 18 months starting from February 2022.

Project description:

The MIOSEC project aims at developing an innovative integrated capillary electrophoresis (CE)- ion mobility spectrometry tandem mass spectrometry (IMS-MS/MS) methodology for an exhaustive characterization of intact glycoproteins and glycopeptides (Figure 1).

Instrumentation:

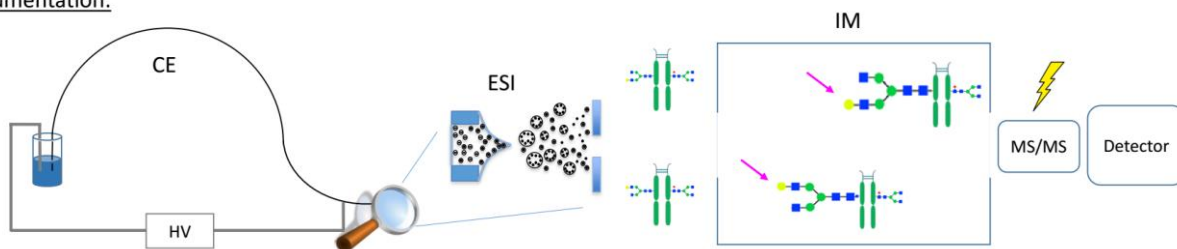


Figure 1: Schematic representation of the coupling

The characterization of glycoproteins or glycopeptides is a crucial issue in life-science since they are known to be involved in molecular recognition, cell adhesion and can be responsible of physical and biological cell properties.

Several types of samples will be studied with this newly established coupling, such as monoclonal antibodies as previously analyzed in our group^{1,2}. The structure of glycopeptides found in venoms from various species of cone snail will also be explored, where glycans were shown to be responsible the potent biological activity, justifying the importance of their structure and linkage position characterization³.

The post-doc will be supported by the expertise of several members of the Analytical Science team (IBMM-F12 team) such as venoms peptides composition, mass spectrometry/ion mobility and capillary electrophoresis analysis of biomolecules.

Qualification:

- You are highly motivated to work on the implementation of a new coupling method for the analysis of biomolecules.
- You should hold a PhD in a relevant subject of the project i.e., either in capillary electrophoresis of biomolecules or in mass spectrometry/ion mobility, with a good expertise in analytical chemistry in general.
- Experience in coupling between analytical instrumentations: either on the establishment of the coupling itself or on the validation of a new method.
- Experience with biological (proteins, peptides, glycans) sample handling such as purification, storage, ...
- You have strong communication and presentation skills, and English is required (verbal and written).
- Good knowledge about database creation such as Microsoft Access is advantageous.
- You enjoy working independently as well as part of a team and you challenging scientific obstacles with an optimist aptitude.

Send your application by e-mail before December 31st, 2021, to claudia.muracciale-bich@umontpellier.fr including CV with names and addresses of two referees and motivation letter.

Références bibliographiques :

¹ Dadouch M., Ladner Y., Bich C., Larroque M., Larroque C., Morel J., Bonnet P.-A., Perrin C., *Analyst* (2020) **145**, 1759

² Dadouch M., Ladner Y., Bich C., Montels J., Morel J., Bechara C., Perrin C., *J. Chrom. A* (2021) **1648**, 462213

³ Hocking H. G., Gerwig G. J., Dutertre S., Violette A., Favreau P., Stöcklin R., Kamerling J. P., Boelens R., *Chem. Eur J.* (2013) **19**, 870