

2-year Postdoctoral position

Two-dimensional liquid chromatography for the characterization of hyaluronic-based products

The Institute of Analytical Sciences has a postdoctoral position available to develop online targeted/untargeted two-dimensional liquid chromatography methods coupled with mass spectrometry.

In the context of an **industrial collaboration** between the Chromatography and Hyphenated Techniques research team and an international cosmetic company, the individual hired for this position will develop and optimize online comprehensive LCxLC separation for the characterization of hyaluronic-derived products. Two levels of identification will be investigated. The higher level, corresponding to the understanding of crosslinking between oligosaccharides and crosslinkers. In this fact, polymer length and composition, relating it to the various reaction conditions the industrial company experiences, will be characterized. The lower level, reached after enzymatic digestion will bring information about the arrangement order and/or isomeric species. The development of 2D cartography within a targeted approach will be achieved and evaluation of ion mobility as a complementary dimension will be considered to study the impact of crosslinking process on the molecular structures. The setup of an in-house reference database will allow the comparison of experimental batches. NMR analyses will be carried out on selected samples to characterize cross-linking behavior and unexpected products.

Candidates will have a **PhD in analytical chemistry** or related discipline. Experience with liquid chromatography and mass spectrometry is required. Applicants with expertise in two-dimensional liquid chromatography are preferred. Experience with advanced mass spectrometry techniques including ion mobility, HRMS data treatment are also desirable but not compulsory. Expertise in Matlab programming or Agilent data processing (MS profiler) is a plus.

Finally, the individual must also be able to work with interdisciplinary teams of researchers, communicate and report in an industrial environment. Excellent scientific writing as demonstrated by peer-reviewed publications is expected.

The position will be located at ISA (Institut des Sciences Analytiques) in Villeurbanne (Lyon Region, France). The laboratory is well equipped with state-of-the-art instruments including online two-dimensional liquid chromatography, supercritical fluid chromatography, and ion mobility TOF instrument.

The position is opened for **two years, starting early 2022**.

Applications must include a CV, 2 relevant publications and eventually reference letters and has to be sent **before 1st December** to Karine Faure karine.faure@isa-lyon.fr