

CON-PRA-030

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## CONFIRMATORY METHODS

### LC-MS<sup>n</sup> practical aspects

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#### • Context

During their first period of development, the liquid chromatography-mass spectrometry techniques were met with great enthusiasm from most end-users. An extended application range, the needlessness of derivatisation step prior to injection, the possibility of reduced sample preparation and high-throughput analysis were some of the arguments given in favor of these techniques. Several years and more than thousands of applications later, more attention is paid to their potential adverse aspects and limitations, especially regarding the existence of matrix effects. In this context, a sensibilisation of end-users to the main critical issues to consider for an optimal daily use of LC-MS<sup>n</sup> instruments is mandatory.

#### • General objective(s)

The goal of this practical training is to present and discuss any practical aspect linked to the daily use of LC-MS<sup>n</sup> technologies that have a direct impact on the result quality. The objective is then for future end-users of this technique to properly address the optimisation, maintenance, and long-term preservation of their LC-MS<sup>n</sup> equipment performance. This hands-on and interactive session will be based on a real case study related to the analysis of a corticosteroid compound, for demonstrating a typical method development process in real time on a triple quadrupole instrument.

#### • Pedagogical objectives

- ✓ To know the main sources of potential troubleshooting/pitfall associated to an LC-MS<sup>n</sup> measurement
- ✓ To know the main critical parameters to consider and optimise for finalising an LC-MS<sup>n</sup> acquisition method

#### • Main items

- ✓ Short introduction to LC-MS<sup>n</sup> systems, the HPLC pump and column, the ionisation interface, the mass analyser, the ion detection, real case study (method development and optimisation) based on direct introduction experiment performed on a corticosteroid compound.

#### • Pedagogical tools

- ✓ PowerPoint slide show (+ paper printout and PDF file copy)
- ✓ Practical exercise on a real LC-MS<sup>n</sup> device (triple quadrupole) using direct introduction

#### • Duration

- ✓ 1 hour

#### • Pre-requisite

- ✓ Basics of mass spectrometry (CON-THE-010, CON-THE-020 and CON-THE-030)