

**CON-PRA-010**

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**CONFIRMATORY METHODS**  
**Structural elucidation:  $\beta$ -agonists**

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• **Context**

$\beta$ -agonist drugs are forbidden growth promoters within the EU according to the 96/23 directive, in which they are classified as belonging to group A5. In order to check whether the regulation is fulfilled or not (compliance with MRPLs/MRLs), controls have to be organised and performed. The confirmatory techniques used are generally based on mass spectrometry coupled to gas chromatography or liquid chromatography.

• **General objective(s)**

The objective of this practical training is to demonstrate the influence of a derivatisation reaction on the fragmentation of labile biological molecules such as  $\beta$ -agonists compounds and to show the evolution of a compound mass spectrum when the reagent gas and the detection polarity are modified.

• **Main items**

Derivatisation / Ionisation (EI, PCI, NCI) / Reagent gas / Fragmentation

• **Pedagogical objectives**

- ✓ To list and compare the different main ionisation modes used in GC-MS
- ✓ To list and compare the different reagent gases used in GC-MS
- ✓ To compare ionisation modes with regard to observed fragmentations
- ✓ To compare derivatisation procedures with regard to observed fragmentations

• **Pedagogical tools**

- ✓ Hands-on: structural elucidation of unknown compounds on data acquired during GC-MS analysis
- ✓ Work in group of 2-3 persons on computers

• **Duration**

- ✓ 2 hours

• **Pre-requisite**

- ✓ Theoretical lectures on confirmatory methods (CON-THE-010, CON-THE-020)