

CON-THE-060

CONFIRMATORY METHODS

Introduction to metabolism

• Context

The efficient monitoring of an administered drug or environmental contaminant in biological matrices may implicate a focus on a biotransformed product rather than on the parent compound. Indeed, metabolism reactions affecting the parent compound entering a living animal organism lead in various extend to a set of putative metabolites. This knowledge is then required in order to orientate the control and corresponding analytical strategies.

• General objective(s)

The final objective of the present module is to understand the rationale for targeting the more appropriate compound, biological matrice, and time window, for the main classes of residues and contaminant to be monitored in the field of chemical food safety. Thus, the purpose of this module is to present the basics of metabolism including pharmacokinetic and pharmacodynamic aspects, especially the main phase I and phase II metabolic reactions, with several associated illustrating real case examples.

• Main items

- ✓ Pharmacokinetic (administration, distribution, binding, phase 1 and 2 reactions, elimination)
- ✓ Phamarcodynamic (receptor binding, mode of action of a chemical)
- ✓ Experimental strategy and case application studies in the field of metabolism (in vitro and in vivo)

• Pedagogical objectives

- ✓ Know the main transformation reaction affecting hormonal residues mainly in the liver
- ✓ Learn how metabolism studies are conducted in laboratories

• Pedagogical tools

- ✓ Slide show

• Duration

- ✓ 1 hour

• Pre-requisite

- ✓ General biology and biochemistry
- ✓ Chemical structure (understanding)
- ✓ Mass spectrometry (CON-THE-010, CON-THE-020 and CON-THE-030)