



Plant and Animal Metabolism Studies

Smithers Viscient's metabolism studies are conducted to determine the nature of residues and the test substance's metabolic pathways in plants and animals. Our experts in metabolism studies conduct in-life phase on site in our greenhouses or in the field with trusted partner laboratories. We conduct the "in-life" phase of other common metabolism studies in goat, poultry and at partner laboratories as well. We work with sponsors to design and plan every detail of a study to best meet the product development and/or regulatory compliance needs.

Our GLP-compliant studies range from preliminary tests to determining the uptake of ¹⁴C radiolabelled agrochemicals and metabolite profiles. Studies in crops grown to maturity can be conducted in our greenhouses, while temperate crops can be grown and treated in outdoor plots to give more realistic information on levels of parent compound and metabolites in mature crops. Crop types that require a warmer climate can be cultivated outdoors in other countries by sub-contracting the "in-life" phase.

Metabolism in rotational crop studies are conducted to determine the nature and amount of pesticide residue in rotational crops used as human food or livestock feed. The analytical phase of metabolism studies is performed in our laboratories by expert and experienced staff.

Total radioactive residue, extractions, matrix clean up, isolations, and characterisation/radioprofiles of the

incurred residue are tailored and performed to satisfy routine as well as complex projects with exceptional care and quality.

Elucidating the structure of novel metabolites is often technically challenging and requires the attention of experienced metabolic chemists. Our laboratories contain advanced chromatographic and mass spectrometry equipment, which provide an efficient metabolite profiling and identification service.

Equipment and Instrumentation includes:

- Walk-in Environmental Chambers, TOC Analyser, Suntest Photolysis Chambers, Laminar flow hoods, Autoclaves
- Flow-through solid and liquid radiometric, 96-well MicroBeta Scintillation Counter, and PhosphorImager Detectors
- SCIEX API5600 QTRAP, API5000 and API6500+, TripleToF API5600/5600+ and Thermo Q-Exactive instruments for Metabolite Characterisation and Identification
- Agilent, Shimadzu, Waters (U)HPLC systems
- *in-silico* metabolite ID/data interrogation packages including Thermo Compound Discover 2.0, ACD/Labs SpectrusDB including MetaSense and SCIEX MetabolitePilot
- State-of-the-art data collection system LAURA 4 and 5