



In Vitro Metabolism Services

Aptuit provides drug development services to pharmaceutical and biotechnology companies worldwide. Our development services are based upon state-of-the-art facilities and timely delivery of quality data. A wealth of experience allows Aptuit to help you define the best strategy for the development of your compound. All of this is driven by your ultimate goal – getting to market faster.

Aptuit In Vitro Metabolism group has an extensive knowledge of drug metabolism and they offer a range of in vitro studies in microsomes, S9 fractions and hepatocytes, supported by conventional and mass spectrometry technologies.

Our service portfolio includes:

Interspecies Profiling

- Comparative metabolite profiling is used to assist in the selection of the most appropriate toxicology species.
- Capable of assessing integrated Phase I and Phase II metabolism.
- Radiolabelled and non-radiolabelled drugs can be investigated, utilizing our bioanalytical capabilities.

Inhibition

- Inhibition of cytochrome P450 enzymes (CYP1A2, 2A6, 2B6, 2C8, 2C9, 2C19, 2D6, 2E1 and 3A) by candidate drugs.
- Investigation of direct (IC_{50} and K_i) and mechanism based inhibition (preliminary investigation, K_i and K_{inact}).

Induction

- Studies can be conducted using human hepatocytes with estimation of cytochrome P450 CYP1A2, 2A6, 2B6, 2C8, 2C9, 2C19 and 3A enzymes activities.
- Induction on ex vivo livers from toxicology studies (we can also perform animal dosing to provide livers) can be used to estimate the induction of cytochrome P450 CYP1A, 2B, 2E, 3A and 4A enzyme activities.
- Total protein and cytochrome P450 content can also be estimated.

Isozyme Characterization

- Study design to identify the cytochrome P450 isoenzymes involved in the metabolism of test substances.
- A combined approach utilizing known chemical inhibitors, supersomes™, lymphoblastoid cells, cytochrome P450 antibodies and correlation analysis is available.

Drug-Drug Interactions

- Methods can be established to assess the interaction of test substances on metabolism of potentially co-administered drugs and to assess the affect of co-administered drugs on the metabolism of test substances.
- Study designs can also include evaluation of IC_{50} and K_i .

Metabolic Stability

- In vitro metabolic stability using liver microsomes and hepatocytes in single or multiple species. Estimation of half-life ($t_{1/2}$), intrinsic clearance (CL_{int}) and hepatic clearance (CL_H).

Additional Aptuit Capabilities

Aptuit offers a comprehensive suite of drug development services that range from candidate selection through to market, including consultancy services, API development and manufacture, preclinical and clinical technologies, pharmaceutical services, large and small scale manufacturing, IVRS, and clinical packaging and logistics, across a wide range of compounds, dosage forms and delivery systems.

For information about Aptuit's services, please call or email:

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Engineering a better drug development process.