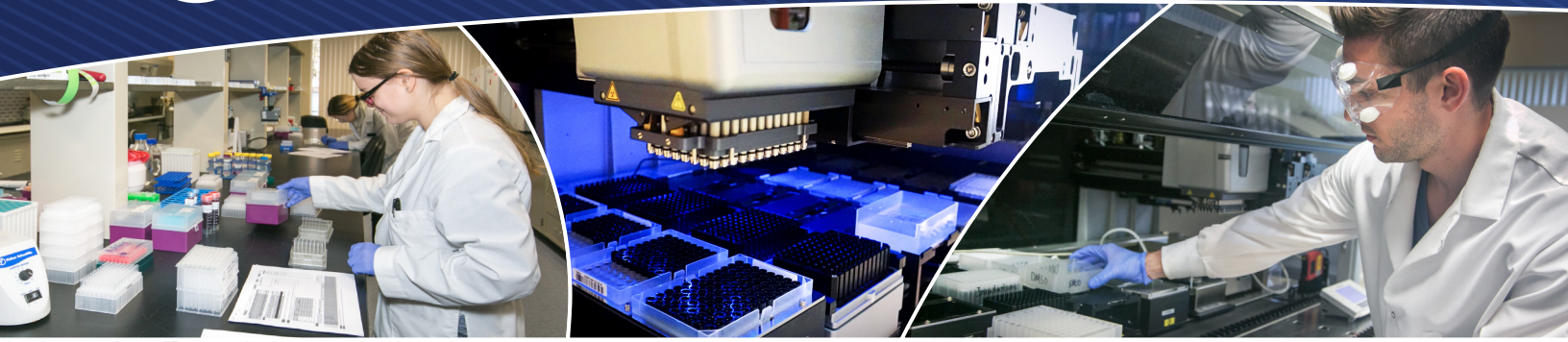




DRUG METABOLISM & PHARMACOKINETICS

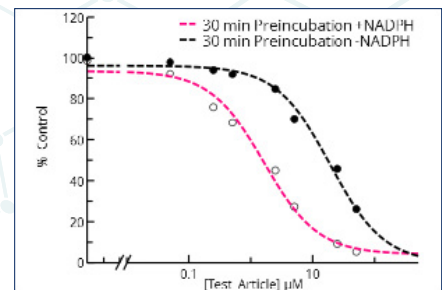


IN VITRO DMPK

Alliance Pharma provides *in vitro* absorption, distribution, metabolism, and excretion (ADME) support for drug discovery and development. With decades of experience in the field, our DMPK team offers a suite of industry-standard assays and customized models using state-of-the-art technology. We have profiled thousands of compounds using our *in vitro* test systems in a variety of species, including mouse, rat, dog, canine, non-human primate and human. Whether you're working in early drug discovery or late stage development in need of support for a regulatory submission, Alliance will provide you with quality results in a cost-effective and timely manner.

We have expertise in numerous *in vitro* model systems including the following:

- Metabolic stability in various systems
 - Microsomes, S9, hepatocytes, liver cytosol, plasma, whole blood, extra-hepatic tissue homogenates, recombinant enzymes
- Metabolite identification and profiling
- Blood cell partitioning
- Protein binding using equilibrium dialysis and ultracentrifugation
 - Plasma, blood, tissue, microsomes, human serum albumin, alpha-1 acid glycoprotein
- Reaction phenotyping (CYP, UGT, transporters)
- Cell permeability and drug transporters (Caco-2, MDR1-MDCK)
- Hepatocyte uptake assays
- Aqueous solubility
- Drug-Drug Interaction Studies
- CYP induction (mRNA or enzyme activity assays)
- CYP inhibition (direct and time-dependent with 7 major isoforms)
- UGT inhibition (UGT1A1, 1A4, 1A9, 2B7)
- MAO inhibition
- Drug transporter substrate and inhibition assays (P-gp, BCRP, OATP1B1, OATP1B3, OAT1, OAT3, OCT1, MATE1, MATE2-K)



Example: Assessment of Time-Dependent Inhibition (IC_{50} Shift) of Midazolam 1'-Hydroxylation by a Test Article

Our automated high throughput screening capabilities allow us to support large volumes with rapid turnaround, and our definitive assays are designed to meet FDA guidelines.





DRUG METABOLISM & PHARMACOKINETICS



IN VIVO PHARMACOKINETICS

Alliance Pharma provides *in vivo* pharmacokinetic (PK) support for your drug discovery needs. Our animal care service technicians have extensive experience conducting *in vivo* PK studies in animal models, primarily mice and rats. Our bioanalytical teams provide rapid analysis for both small and large molecules to allow fast turnaround of data and pharmacokinetic analysis.

To demonstrate our commitment to responsible animal research and good science our vivarium is accredited by AAA-LAC International and OLAW from NIH, which set the highest standards of animal care and use. Animal welfare is of utmost concern, which includes using disposable, individually ventilated housing for all animals.

Our services include the following:

- Comprehensive routes of drug administration: IV, PO, SC, IM, IP, IN, and dermal
- Sparse and serial sample collection (manual and automated Instech systems)
- Mitra™ microsampling
- Tissue collection
- CSF collection
- Urine collection
- I-Stop safe disposal
- Drug formulation support
- Dedicated GLP and non-GLP bioanalytical services

TYPICAL SPECIES

- CD-1® mice
- C57BL/6 (C57 Black 6) mice
- Swiss-Webster mice
- BALB/c mice
- Sprague-Dawley rats
- Albino Wistar rats

