



## Preclinical Pharmaceutical Sciences: In Vitro ADME-Toxicology Services

With more than 30 years of experience conducting DMPK studies, RTI Health Solutions is a leader in drug metabolism and pharmacokinetics, with a focus on pharmaceutical drug development. RTI's highly experienced staff offers innovative approaches to challenging issues in drug discovery and development.

RTI Health Solutions' DMPK group offers a comprehensive selection of in vitro services to help clients manage their drug discovery and development programs. From study design and conduct to data interpretation and reporting, all in vitro DMPK-toxicology studies are directed by a senior DMPK scientist who will be your primary study contact. We offer a variety of standard study designs that can be customized as you require. We offer the following services.

### Drug-Drug Interactions

- CYP inhibition (competitive and mechanism-based)
  - Standard  $IC_{50}$  or  $K_i$
  - Mechanism-based  $k_{inact}$  and  $K_i$
- CYP reaction phenotyping
  - Pooled human microsomes or recombinant CYPs
  - Parent loss or metabolite formation
- CYP induction
  - Primary human hepatocyte cultures
  - Enzymatic activity, mRNA, Western immunoblots

### Intestinal Permeability

- Caco-2 monolayers
- Single or bidirectional permeability
- Pgp substrate or inhibitor

### Metabolism

- Metabolite profiling and identification
  - Microsomes or hepatocytes
  - Species comparisons
- Metabolic stability
  - Microsomes or hepatocytes

### Protein Binding

### Cytotoxicity

- Hepatotoxicity in cultured human hepatocytes
  - Cellular ATP, MTT, or adenylate kinase
  - Caspase activation

### Analytical Capabilities

- Hybrid API 4000 triple quad with linear ion trap
- LC/MS/MS (API 3000, two API 4000s, and API 5000)
- UPLC
- HPLC with UV, fluorescent, electrochemical, and radiometric detection
- GC/MS and GC with EC and FID detection
- Preparative HPLC
- 300- and 500-MHz nuclear magnetic resonance spectrometers

### Contact

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## **Additional Resources**

- DEA Schedule 1 certificate
- Consultation services

## **Working Closely with Our Clients**

RTI-HS technical, research, and development services meet the highest standards of professionalism. We take pride in our scientific stature and our reputation for excellence and meeting the unique requirements of each project. We work closely with our clients to understand their needs and develop a detailed plan that defines the project scope. We have a history of completing projects on time and within budget.

RTI-HS extends its excellence in research and technical services to its business systems and processes. We make it easy for you to partner with us. Our processes and standard operating procedures are developed to protect our clients' intellectual property. We have the contractual, legal, and business structures to efficiently implement your projects, no matter their size.

## **Let RTI-HS Help You**

To learn more about our capabilities, please visit us online at [www.rtihs.org](http://www.rtihs.org), or contact Paul Borron ([pborron@rti.org](mailto:pborron@rti.org)). You can also send us an e-mail at [rtihealthsolutions@rti.org](mailto:rtihealthsolutions@rti.org), or call one of our international offices listed on the front.