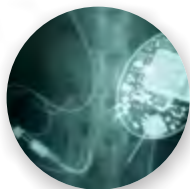


citoxlab

Safety and Health Research



Your partner for
safety pharmacology



www.citoxlab.com

Your partner for safety pharmacology

Citoxlab is an industry leader in GLP-compliant cardiovascular, respiratory and central nervous system physiology and pharmacology, dedicated to drug development and striving to meet your expectations.

We offer validated test systems to support international regulatory requirements, using a variety of large and small animal models and evolving technologies including Jacketed External Telemetry (JET) and Electro-Encephalography (EEG). We also offer extensive experience with biotechnology-derived drugs and early safety pharmacology: ICH core battery tests and supplementary safety pharmacology models.

Our dedicated safety pharmacology facilities include telemetry suites, surgical capabilities and custom-built study rooms with remote observation allowing unbiased data collection.

Our telemetry colonies with a range of implant configurations provide adapted and efficient solutions for your safety pharmacology needs. A large historical database with various administration routes and control agents in all species facilitate interpretation by our board certified experts. Our computerized platforms give access to real-time data interpretation for optimal decision making.



Early safety pharmacology

- Ventricular contractility
- Arrhythmogenicity
- Wide range of screening models



Safety pharmacology core battery

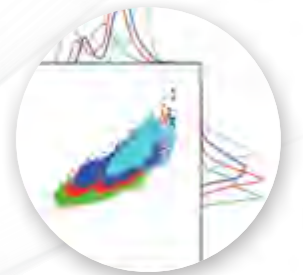
- ICH S7A and S7B**
- Implanted telemetry
 - Plethysmography
 - Continuous video monitoring
 - Remote dosing
 - Real-time data updates



Safety pharmacology endpoints in toxicology studies

ICH S6, ICH S9

- Jacketed External Telemetry: ECG, EEG, blood pressure
- Functional Observational Battery (FOB) in all species
- Respiratory: JET and plethysmography



Other specialties

- EEG: Sleep and seizure liability studies
- EMG for sleep or skeletal muscle function
- Electrophysiology and cardiac pacing
- Ototoxicity studies in rats
- Juvenile models
- Disease models
- GI in rodents & non-rodents
- Migrating Motor Complex (MMC) quantification
- Renal function
- Histamine release and biomarkers

TOXICOLOGY SERVICES

- General toxicology in all species
- Special toxicology
 - infusion, Inhalation, Dermal, Ocular
- Immunotoxicology
- Regenerative medicine
- Reproductive toxicology including minipigs and NHPs
- Carcinogenicity studies also in rasH2 and p53+/- mice
- Genetic toxicology: ICH compliant package
- *In vitro* toxicology: BCOP, h-CLAT, KeratinoSens™, DPRA, Photo 3T3-NRU, Episkin™, chicken eye test
- Agrochemical / chemical / REACH
- QSAR
- Physico-chemical testing
- Ecotoxicology: wide range of test species

SAFETY PHARMACOLOGY

- Integrated safety pharmacology in toxicology studies
 - CV (JET), BP
 - Respiratory (JET), plethysmography
 - CNS (FOB) and JET-EEG
- Safety pharmacology core battery
- *In vitro* assays

- GLP compliant ion channel testing panel (hERG +5)
- CNS *ex vivo* models for seizure liability screening
- Screening and follow-up models
 - Rodent and non-rodent LVP telemetry
 - Anesthetized models
 - Polysomnography
 - Gastrointestinal motility

DMPK, BIOANALYSIS, BIOMARKERS

- ¹⁴C and ³H ADME studies in all species
- *In vitro* metabolic clearance, metabolite ID and profiling, DDI package (metabolism and transporters)
- Bioanalysis: LC-MS/MS, GC-MS/MS, LC-ICP/MS, LC-Radiodetection, ELISA, RIA
- Toxicogenomics, miRNA: Affymetrix™ accredited service provider, next generation sequencing (Illumina®)
- Immunology: 10-color flow cytometer, Luminex, Meso Scale

MEDICAL DEVICE

- Biocompatibility testing
- Cardiovascular stents, electrophysiology

- and structural heart studies
- Long-bone defects and craniomaxillofacial/dental models
- Spinal fusion models
- Joint and cartilage repair models
- Regenerative medicine (growth factors, biomaterials, cell and gene therapy)

SPECIALIZED EXPERTISE

- Juvenile studies including minipigs
- Ototoxicity in rats
- Fertility studies in rodents and NHPs
- Radiation safety and efficacy studies
- Drug transporter studies and Drug-Drug Interactions
- Tissue Cross Reactivity (TCR): human and animal tissue banks
- Gene therapy vector biodistribution via qPCR
- ES cell testing: devTOX™ and cardioTOX™ (with Stemina)
- Lead optimization and predictive toxicology services: Leadscreen™



GLP CERTIFIED

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