

citoxlab
Safety and Health Research



Your partner for
Inductively Coupled Plasma-Mass
Spectrometry (ICP-MS)



www.citoxlab.com

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The testing of trace metals in drug products, drug substances, biologics, dietary supplements, and medical devices is critical for determining the toxicity of a material and predicting its interactions with other compounds.

At Citoxlab, we offer personalized analytical and bioanalytical ICP-MS services for rapid elemental analysis in various matrices. Our team of specialists partner with you to successfully develop robust and reproducible validated methods to meet current regulations and comply with Good Laboratory Practice (GLP) standards.

In addition to ICP-MS, Citoxlab also offers a wide variety of other analytical and bioanalytical techniques in support of non-clinical and clinical programs. The competence and extensive experience of our highly trained and specialized staff, combined with state-of-the-art equipment, allow us to respond to your needs from early development to fully GLP validated methods.



Flow injection procedures combined with ICP-MS

- Controlled on-line and off-line sampling procedures to decrease sample contamination
- Introduction of low sample and reagent volumes
- Improved stability and reproducibility with difficult matrices



MS analytical techniques

- HRMS Orbitrap Q-Exactive
- LC-MS/MS/MS: API 6500 QTrap
- LC-MS/MS/MS: API 5500 Qtrap
- LC-MS/MS: TSQ QUANTUM ULTRA MAX TSQ VANTAGE - API 4000 - API 3000
- GC-MS: EI / CI
- ESI, HESI, APCI, and APPI interfaces
- Mass Spectrometry Imaging (MSI): in collaboration with Imabiotech



Analytical and bioanalytical techniques

- HPLC-UV, HPLC-fluorescence, HPLC- electrochemical, HPLC-radiodetection
- GC-FID
- 3H and 14C LSC
- Immunology
- ELISA, ADA, NAb, RIA
- MesoScale Discovery
- Flow cytometry
- RT-PCR - qPCR
- Microsampling
- Non-clinical and clinical bioanalysis



Species

- Rodents
- Rabbits
- Dogs
- Minipigs
- NHPS

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

Citoxlab France

+33 2 32 29 26 26
contact.france@citoxlab.com

Citoxlab North America

+1 888 353 2240
contact.northamerica@citoxlab.com

Citoxlab USA / Xenometrics

+1 913 850 5000
info@xenometricsllc.com
www.xenometricsllc.com

AccellAB

+1 450 435 9482
info@accellab.com
www.accellab.com

Citoxlab Denmark

+45 56 86 15 00
contact.scantox@citoxlab.com

Citoxlab Hungary

+36 88 545-300
contact.hungary@citoxlab.com

Atlanbio

+33 2 51 10 01 00
atlanbio@atlanbio.com
www.atlanbio.com

SOLVO Biotechnology

+36 62 424 729
sales@solvo.com - www.solvo.com

Media Services Ltd (Japan)

+81 3 3666 9915
citoxlab@mediaservices-jp.com