



Preclinical Pharmacokinetic Study in Rats

This non-GLP assay is used to investigate the pharmacokinetic characteristics of a test article after dosing via different routes of administration in rats

Required from Customer	<ul style="list-style-type: none">• Approval of final study design (regimen, specimen, sampling times)• A minimum of 100 mg of test article in powder form• Molecular mass (exact mass) of the test compound and its salt form• MSDS or handling and storage information, (e.g., light sensitive, store at -20°C) and other compound information (solubility, etc.)• Solubility and stability data (if available)
Deliverables	<ul style="list-style-type: none">• Non compartmental pharmacokinetic parameter estimates of maximum plasma concentration (C_{\max}), time to maximum plasma concentration (t_{\max}), area under the concentration time curve (AUC), plasma, renal or biliary clearance (Cl), volume of distribution (V_d) and bioavailability (F) depending on the study design
Substrate	<ul style="list-style-type: none">• Test compound in dosing vehicle, i.e. water, saline, 5% methylcellulose suspension
Assay System	<ul style="list-style-type: none">• Pharmacokinetic studies will be conducted in male albino Sprague-Dawley rats, 9-10 weeks old and weighing 250-400 g, fasted overnight with free access to water• For any invasive dosing or sampling procedures, rats are anesthetized either with an im injection of ketamine/xylazine and butorphanol or by 2% isoflurane
Assay Conditions	<ul style="list-style-type: none">• Four rats per cohort (n=4) will be dosed according to three different dosing regimen, i.e. dose concentrations, route of administration, addition of transporter or metabolism inhibitors• Test article will be administered by oral gavage, intravenous, intraperitoneal, intramuscular or intrainestinal injection/infusion• Specimens will be collected at predetermined time points in accordance with IACUC approved maximum volumes. Specimen routinely collected include blood, urine, bile, and tissue samples• All samples will be assayed by HPLC or LC-MS/MS with a minimum of a four point calibration curve
Data Analysis	<ul style="list-style-type: none">• Pharmacokinetic analysis will be performed using the non-compartmental module of Kinetica (Version 4.4.)
Quality Control	<ul style="list-style-type: none">• QC review of raw and processed data.