Model Name
Chronic Liver Fibrosis, Carbon Tetrachloride (CCl4) with Phenobarbital Induced, Rat

Item Number
546050

Introduction
Carbon tetrachloride (CCl4) is widely used to experimentally induce liver injury in rodents. A single dose of CCl4 leads to necrosis and steatosis, while prolonged administration leads to liver fibrosis, cirrhosis, and HCC. This study is to investigate the anti-inflammatory and anti-fibrosis effects on CCl4-induced hepatotoxicity in rat.

Procedure Summary
Liver fibrosis is induced by the simultaneous oral administration of CCl4 and phenobarbital. Phenobarbital sodium (35 mg/dl) is given to the rats in the drinking water. After 14 days on phenobarbital sodium, male Wistar rats weighing 320 ± 10 g are administered intragastrically with CCl4 at 412 mg/kg dissolved in olive oil (0.08 ml CCl4/ml olive oil) once a week for a total of 8 weeks. Test substance is administered p.o. to a group of 6 Wistar derived male rats during the 8 weeks of CCl4 injection. The animals are sacrificed 72 hrs after the last CCl4 administration. Serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), total bilirubin and serum albumin levels are determined for evaluation of hepatic impairment by Toshiba automatic analyzer (TBA-120FR). Liver specimens will be harvested for histology examination and hepatic hydroxyproline content determination. In addition, liver and body weight of test animal are recorded and calculated (g liver/100 g B.W.) as a reference parameter for hepatotoxicity. One-way ANOVA and Dunnett's test are applied for comparison between treated and vehicle control groups. Significance is considered at p<0.05.

Suggested Testing
• n=6/group (study design dependent)
• Doses may be administered PO, IV, IP and SC
• Assessments available: Body weight, ALT, AST, ALP, T-BIL and ALB levels, Liver weight, Biomarker analysis (protein or mRNA) and Histopathology

Turnaround Time(s)
• For Acute Assays: 4 weeks from sample receipt
• For Subacute Assays: 6 weeks to 3 months

Literature

Related Assay(s)  (Item # - Assay Name - Species)
546060 - Chronic Liver Fibrosis, Carbon Tetrachloride (CCl4) Induced, Rat - Rat

Modified Protocols
We will readily accommodate client-specified alterations.

Laboratory
These assays are performed at our AAALAC accredited laboratory in Taipei.

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/
Animal Welfare
All aspects of this work is performed in general accordance with the Guide for the Care and Use of laboratory animals (National Academy Press, Washington, DC, 2011). The study protocol was approved by the Pharmacology Discovery Services IACUC and is performed with the oversight of veterinarians to assure the humane treatment of laboratory animals.

Reference Compound(s)
N/A

Last modified November 20, 2017