Model Name
Pancreatitis, Chronic, Caerulein-Induced

Item Number
566100

Introduction
Caerulein-induced pancreatitis in mice is a well-studied model of the gastrointestinal disorders, including acute pancreatitis and chronic pancreatitis. The initiation of this disorder is mediated by activation of a cascade of digestive zymogens that results in acinar cell necrosis and pancreatic oedema followed by an inflammatory response. The caerulein-induced pancreatitis is a useful mouse model to be used in examining mechanisms of pathogenesis of pancreatitis, and assessing therapeutic or prophylactic efficacy of drug candidates.

Procedure Summary
Groups of 6 male C57/BL/6 mice weighing 22 ± 2 g (7-8 weeks of age) are used. Caerulein (50 μg/kg i.p.) is injected six times hourly on Days 1, 3 and 5 to induce chronic pancreatitis. The test articles and vehicle are administered once daily by oral gavage from Day 1 to Day 7. On Days 1, 3 and 5, test articles and vehicle are administered 1 hour before the caerulein challenge. The study is terminated and the animals are sacrificed on Day 8. Serum α-amylase concentration and pancreas weight are determined. One-way ANOVA and Dunnett's test are employed to ascertain significant difference between vehicle control and treated groups. Significant level is set at p<0.05.

In addition, pancreatic tissue is harvested and then is fixed in 10% formalin for histopathology.

Optional:
Pancreatic tissue is kept in RNAlater and snapped frozen for collagen I mRNA analysis.
Pancreatic tissue is snapped frozen at -80°C for MPO measurements.

Suggested Testing
• n=6/group (study design dependent)
• Doses may be administered PO, IV, IP, and SC
• Assessments available: Body weight, MPO activity, Pancreas weight, Biomarker analysis (protein or mRNA) and Histopathology

Turnaround Time(s)
• Acute Assay: In-Life completion in 2-4 weeks from sample receipt
• For Subacute Assays: 6 weeks to 3 months

Literature

Related Assay(s) (Item # - Assay Name - Species)
566000 – Pancreatitis, Acute - Mouse

Modified Protocols
We will readily accommodate client-specified alterations.

Laboratory
These assays are performed at our AAALAC accredited laboratory in Taipei.
Animal Welfare
All aspects of this work are 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
*Devazepide (L-364,718)

Last modified October 1, 2018