Model Name
Pancreatitis, Acute, Caerulein-Induced

Item Number
566000

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 with activation of a cascade of digestive zymogens that results in acinar cell necrosis and pancreatic edema followed by an inflammatory response. The caerulein-induced pancreatitis is a useful mouse model to examine mechanisms of pathogenesis, therapeutic or prophylactic efficacy.

Procedure Summary
A group of 6 ICR derived male mice fasted overnight and weighing 22 ± 2 g are used. Caerulein (100 µg/kg i.p.) is then injected three times at 2 hour intervals and test substance is administered p.o. one hour after each injection. Animals are sacrificed 9 hours after the first caerulein injection and serum α-amylase concentration from each animal is determined. 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, Amylase and Lipase levels, 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
Niederan C et al. Gastroenterology. 88:1192, 1985

Related Assay(s)  (Item # - Assay Name - Species)
566100 – Pancreatitis, Chronic - 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.

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Reference Compounds
*Devazepide (L-364,718), Proglumide

Graph

Serum Amylase Level (U/L)

- Blank control
- Vehicle 10 mL/kg x3 PO
- Devazepide 0.1 mg/kg x3 PO

*P<0.05, vehicle vs. sham control; unpaired Student’s t test.
*P<0.05, treated vs. vehicle control; one-way ANOVA followed by Dunnett’s test.

Last modified October 1, 2018