Model Name
Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis, Mouse

Item Number
553405

Introduction
Human inflammatory bowel disease (IBD) is a chronic inflammatory condition comprise of two major disorders, Crohn's disease and ulcerative colitis. The fundamental symptoms of IBD are abdominal pain, bloody diarrhea and body weight loss. 2,4,6-Trinitrobenzenesulfonic acid solution (TNBS)-induced IBD, particularly in reference to Crohn's disease (CD) is commonly used to study the mechanisms of gastrointestinal inflammation and evaluate the therapeutic efficacy.

Procedure Summary
Groups of 6 BALB/c derived male mice (age of 8 weeks old) are used. Mice are fasted overnight before TNBS challenge. Distal colitis is induced by intracolonic instillation of TNBS (1mg in 0.1mL 50% ethanol) after which, animals are kept in a vertical position for 30 s to ensure that the solution remains in the colon. Control mice are received 0.9% NaCl alone. Test substances, vehicle (10 mL/kg) and the standard, Cyclosporin A (75 mg/kg) are administered by oral gavage 24 hr and 2 hr before TNBS administration, followed by daily dosing for 2 days (up to Day 4). During the experiment, body weight, fecal occult blood and stool consistency will be recorded daily. On Day 5, the mice are euthanized by CO₂ asphyxiation and colon length is record and weighed. ANOVA followed by Dunnett's test is applied for comparison between vehicle and treatment groups. P<0.05 is considered significant.

Suggested Testing
- n=6/group (study design dependent)
- Doses may be administered PO, IV, IP and SC
- Assessments available: Body weight, Colitis score, Colon weight /length, Biomarkers, and Histology

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)
553400 - Inflammatory Bowel Disease (IBD), DNBS-Induced Colitis - Rat
553410 - Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis - Rat
553420 - Inflammatory Bowel Disease (IBD), DSS-Induced Colitis – Mouse
553430 - Inflammatory Bowel Disease (IBD), Oxazolone-induced Colitis - 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
Cyclosporin A

Graph

<table>
<thead>
<tr>
<th>Sham control</th>
<th>Vehicle 10 mL/kg qd×4 PO</th>
<th>Cyclosporin A 50 mg/kg qd×4 PO</th>
<th>Cyclosporin A 75 mg/kg qd×4 PO</th>
</tr>
</thead>
</table>

*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