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

Item Number
553400

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-Dinitrobenzenesulfonic acid (DNBS)-induced IBD is commonly used to study the mechanisms of gastrointestinal inflammation and evaluate the therapeutic efficacy.

Procedure Summary
Groups of 6 Wistar derived male rats weighing 200 ± 20 g. Animals fasted for overnight are used. Distal colitis is induced by intra-colonic instillation of DNBS (30 mg in 0.5 ml 30% ethanol). Test substance and vehicle (10 mL/Kg) are administered orally 24 and 2 hours before DNBS instillation and then daily for 5 days. During the experiment, the presence of diarrhea is recorded daily. On Day 8, each colon is removed, scored and weighed. Colon-to-body weight ratio is then calculated for each animal according to the formula: Colon (g)/BW x 100. The “Net” increase in ratio of Vehicle-control + DNBS group relative to Vehicle-control group is used as a base for comparison with test substance treated groups and expressed as “Dec. (%)” (Percent decrease). 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, SC or by Infusion Pump
• 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)
553410 - Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis - Rat
553405 - Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis - Mouse
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.

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/
Reference Compound
Sulfasalazine

Graph

<table>
<thead>
<tr>
<th>Condition</th>
<th>Colon-to-body weight ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sham control</td>
<td>0.15</td>
</tr>
<tr>
<td>Vehicle 10 mL/kg qd×7 PO</td>
<td>0.85</td>
</tr>
<tr>
<td>Sulfasalazine 300 mg/kg qd×7 PO</td>
<td>0.65</td>
</tr>
<tr>
<td>Mesalazine 300 mg/kg qd×7 PO</td>
<td>0.45</td>
</tr>
</tbody>
</table>

*P<0.05, vehicle vs. sham control; unpaired Student's t test.
**P<0.01, treated vs. vehicle control one-way ANOVA followed by Dunnett's test.

Last modified October 1, 2018