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

Item Number
553420

Introduction
Human inflammatory bowel disease (IBD) is a chronic inflammatory condition comprise of two major disorders, Crohn’s disease and ulcerative colitis. Dextran Sulfate Sodium (DSS)-induced IBD is a chemically-induced model using DSS in the drinking water that induces ulcerative colitis-like inflammation. The fundamental symptoms of IBD are abdominal pain, bloody diarrhea and body weight loss. DSS-induced IBD 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. 5 % Dextran Sulfate Sodium (DSS), molecular weight 36,000-50,000 Da (MP Biomedicals) is given in autoclaved drinking water for 5 days, and then change to normal drinking water for the followed 5 days in the study. The mice at sham group are given drinking water only. Test substances, vehicle (10 mL/kg, PO) and the standard, Cyclosporin A (25 mg/kg, PO) are administered from Day 6 once daily for 4 consecutive days. During the experiment, body weight, fecal occult blood and stool consistency will be recorded daily from Day 6 to Day 10. On Day 10, 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
553405 - Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis - Mouse
553410 - Inflammatory Bowel Disease (IBD), TNBS-Induced Colitis - Rat
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

*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