Model Name
Inflammatory Bowel Disease (IBD), Oxazolone-induced Colitis

Item Number
553430

Introduction
Human inflammatory bowel disease (IBD) is a chronic inflammatory condition comprising two major disorders, Crohn’s disease and ulcerative colitis. The fundamental symptoms of IBD are abdominal pain, bloody diarrhea and body weight loss. Oxazolone (4-ethoxymethylene-2-phenyl-2-oxazolin-5-one, OXA)-induced colitis model has become to be accepted as a T helper-2 (Th-2) type colitis model for human ulcerative colitis (UC) and is commonly used to study the mechanisms of gastrointestinal inflammation and evaluate the therapeutic efficacy.

Procedure Summary
Groups of 6 male BALB/c mice are sensitized by applying oxazolone (150 µL, 3% in acetone/olive oil, 4:1 v/v) to their pre-shaved rostral back on Day 0. The animals are re-sensitized with oxazolone on Day 5. Mice are fasted overnight before oxazolone challenge. Distal colitis is induced by intracolonic instillation of oxazolone solution (1 mg in 0.1 mL 40% ethanol), after which animals are kept in a vertical position for 30s to ensure that the solution remains in the colon. Control mice receive 0.1 mL 0.9% NaCl alone. Test article, and vehicle (10 mL/kg) are administered by oral gavage 24 (Day 4) and 2 hours before oxazolone challenge, followed by once daily dosing through Day 7 for a total of 4 consecutive days. During the experiment, body weight, fecal occult blood and stool consistency are recorded daily. On Day 8, mice are euthanized by CO₂ asphyxiation and colon length is record and weighed. Furthermore, when the abdominal cavity is opened before removal of the colon, adhesions between the colon and other organs are noted as is the presence of colonic ulceration after removal and weighing of each colon. Macroscopic scoring will be performed, and photos of the intact colons taken. The colon length and colon-to-body weight ratio is calculated for each animal according to the formula: colon length (cm) / BW × 100%. The “Net” increase in ratio of vehicle-control + oxazolone group relative to vehicle-control group is used as a base for comparison with treated groups and expressed as “Dec. (%)” (Percent decrease). ANOVA and Dunnett’s test are used to ascertain difference between vehicle control and treated mice. Significance is set at p<0.05 level.

The stool consistency and fecal occult blood are measured on Day 6 to Day 8 after oxazolone challenge (Day 5) and the criteria for stool consistency and fecal occult blood test are shown as followings:

1. Stool consistency is indicated with normal stools (0), soft but still formed (1), very soft (2) and diarrhea (3).
2. Fecal occult blood is indicated with negative hemoccult (0), positive hemoccult (1), blood traces in stool visible (2) and rectal bleeding (3)

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

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/
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
553420 - Inflammatory Bowel Disease (IBD), DSS-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
Sulfasalazine

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Last modified October 1, 2018

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