Model Name
Arthritis, Collagen-Induced (CIA), Rat

Item Number
553700

Introduction
Rheumatoid arthritis (RA) is a chronic inflammatory disorder that causes pain, swelling, stiffness and loss of function in joints. Adjuvant-induced arthritis (AIA) and collagen-induced arthritis (CIA) are commonly used to study the mechanisms of inflammatory joint disease and evaluate the therapeutic efficacy.

Procedure Summary
Groups of 6 Lewis derived female rats weighing 160 ± 20 g are used. The animals are challenged with porcine type-II collagen with incomplete Freund's adjuvant on Day 1 (0.2 mg/0.2 mL/rat, subcutaneously at the base of the tail) and booster on Day 7 (0.1 mg/0.1 mL/rat, s.c.). Animals are stratified into groups of 6 each, based on the volume of two hind paws on Day 16 and then dosing begins on Day 17. Test compound, dexamethasone (0.3 mg/kg), and vehicle are administered orally (PO) once a day for 14 consecutive days from Day 17 to Day 30. Arthritis is assessed by using a qualitative severity score system and hind paw volume (mL) measured with a plethysmometer on Days 1, 7, 10, 14, 16, 18, 20, 22, 24, 26, 28 and 30. Two-way ANOVA followed by Bonferroni'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, Paw Volume, Clinical Assessment, Biomarkers and Histology

Turnaround Time(s)
- Acute Assay: In-Life completion in 4-6 weeks from sample receipt
- For Subacute Assays: 6 weeks to 3 months

Literature

Related Assay(s) (Item # - Assay Name - Species)
553010 - Arthritis, Adjuvant-Induced (AIA) – Rat
553600 - Arthritis, Collagen mAB-Induced (CAIA) - Mouse
553510 - Inflammation, Carrageenan – Mouse
553520 - Inflammation, Carrageenan – Rat

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 Compounds
* Dexamethasone, Hydrocortisone

Graph

Last modified October 1, 2018