Introduction
Allergic contact dermatitis (ACD) is a common disease caused by specific inflammatory reactions. It is a delayed-type hypersensitivity (DTH) reaction consisting of an induction (sensitization) phase and an elicitation (challenge) phase. In this model, oxazolone is sensitizing the mice 7 days prior to challenge. The oxazolone-induced allergic contact dermatitis mouse model is commonly used to study the mechanisms of skin inflammation and evaluate the therapeutic efficacy.

Procedure Summary
Male BALB/c mice weighing 22 ± 2 g are used. The animals are sensitized by applying oxazolone (100 µL, 1.5% in acetone) on their shaved abdominal surface (Day 0). Seven days later, test substances, dexamethasone and the vehicle (20 µL/ear) are applied topically to the anterior and posterior surfaces of the right ear 30 minutes before and 15 minutes after oxazolone (1%, 20 µL/ear) challenge. The right and left ear thickness of each mouse is measured with a dial thickness model micrometer gauge at 24 hours after oxazolone as an index of inflammation. Ear edema is calculated by subtracting the thickness of the left ear (normal control) from right ear (treated ear) as an index of inflammation. Percentage inhibition is calculated according to the formula: (Ic – It)/Ic x 100, where Ic and It refers to the increase of ear thickness (mm) both in the control and treated animals. One-way ANOVA and Dunnett’s test are applied for comparison between treated and vehicle control groups. Significance is considered at p<0.05.

Suggested Testing
- n=6/group (study design dependent)
- Doses may be administered TOP, PO, IV, IP, and SC
- Assessments available: Body weight, Ear thickness, Ear weight, Biomarker analysis (protein or mRNA) and Histopathology

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)
554010 - Dermatitis, Contact, Arachidonic Acid-Induced - Mouse
554310 – Dermatitis, Contact, Capsaicin-Induced – Mouse
554510 - Dermatitis, Contact, Croton Oil-Induced – Mouse
555010 - Dermatitis, Contact, Phorbol Ester-Induced - Mouse

Modified Protocols
We will readily accommodate client-specified alterations.

Laboratory
These assays are performed at our AAALAC accredited laboratory in Taipei.

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/
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
Indomethacin, Dexamethasone 21-acetate

Graph

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