Model Name
Dermatitis, Atopic, DNCB-Induced

Item Number
555700

Introduction
Atopic dermatitis (AD) is characterized by chronic highly pruritic and relapsing inflammatory skin lesions. It is reported that 2,4-dinitrochlorobenzene (DNCB), an electrophilic and cytotoxic benzene derivative, induces stable clinical AD-like skin diseases in NC/Nga mice. Skin changes in NC/Nga mice are evidenced by scratching behavior, followed by the rapid development of erythema, lichenification with edema, and hemorrhage. Histological examinations have revealed hyperplasia and accumulation of eosinophils and mast cells in skin lesions. In addition to these skin changes, NC/Nga mice exhibit elevated levels of total serum IgE. DNCB-induced AD model can be applied for evaluating potential antipruritic and antiinflammatory substances.

Procedure Summary
Female 8 to 10-week-old NC/Nga mice are randomly divided into groups of eight each and the dorsal skin and ears sensitized with 200 µl of a 1% DNCB on Day 4 followed by challenges with 150 µl of 0.2 % DNCB every three days (Days 7, 10, 13). Test compounds and vehicle are administered daily by gavage starting on Day 1 through Day 14. Scratching assay is performed every 3 days (Days 2, 5, 8, 11 and 14). The experiments are terminated on Day 15. Macroscopic lesions are scored and ear thickness is measured. The severity of skin lesions on the face, ears, neck, and dorsal skin is evaluated. The total clinical skin severity score is defined as the sum of the individual scores. ANOVA followed by Dunnett’s test is applied for comparison between vehicle control and test compound treated groups. P<0.05 is considered significant.

Suggested Testing
• n=8/group (study design dependent)
• Antipruritic effects assessed at an initial dose of 30 mg/kg (p.o.)
• Dosing volume at 10 mL/kg

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)
509800 - Scratching, Chloroquine-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.

Graph

Last modified October 1, 2018