Model Name
Analgesia, Bone Cancer Pain, MRMT

Item Number
504500

Introduction
Pain may be induced by intra-tibial injections of syngeneic MRMT-1 rat mammary gland carcinoma cells. Such assays are useful to detect agents with primarily mild to moderate peripheral as well as strong central analgesic activity (e.g., cyclooxygenase inhibitors and opioids, respectively).

Procedure Summary
Groups of 10 female Sprague Dawley rats weighing 180 - 220 g are employed. A 3 ml (3 x 104 cells) volume of culture medium or tumor cells in medium is slowly injected into the intramedullary cavity on day 0 for bone cancer pain induction. The animals are pre-selected by reduction 8 g or more of force relative to the response of the individual paw before tumor cell injection on day 18. The manual von Frey test is repeated at 1 hour post test compound administration by oral gavage. One-way ANOVA followed by Dunnett’s test is applied for comparison between vehicle control and test article groups. P<0.05 is considered significant.

Suggested Testing
• n=10/group (study design dependent)
• Analgesic activity assessed at an initial dose of 100 mg/kg
• 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)
506040 - Analgesia, Tail Flick – Rat
506020 - Analgesia, Tail Flick – Mouse
505700 - Analgesia, Post-operative Pain – Rat
505000 - Analgesia, Phenylquinone (PQ) Writhing – Mouse
504250 - Analgesia, Neuropathic Pain, Spinal Nerve Ligation – Mouse
504400 - Analgesia, Neuropathic Pain, Paclitaxel Induced – Rat
504200 - Analgesia, Neuropathic Pain, Chung Model – Rat
504100 - Analgesia, Neuropathic Pain, Bennett Model, Nerve Ligation – Rat
503960 - Analgesia, Mono Sodium Iodoacetate-Induced Osteoarthritis – Rat
506600 - Analgesia, Hot Plate – Rat
504010 - Analgesia, Formalin – Rat
504000 - Analgesia, Formalin – Mouse
503955 - Analgesia, Complete Freund's Adjuvant-Induced Thermal Hyperalgesia – Rat
503950 - Analgesia, Complete Freund's Adjuvant-Induced Mechanical Allodynia – Rat
503940 - Analgesia, Carrageenan-Induced Mechanical Allodynia – Rat
503900 - Analgesia, Acetic Acid Writhing - Mouse

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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 is 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(s)
Morphine

Graph(s)