Model Name
Cholinergic Agonism, Central/Peripheral

Item Number
520010

Introduction
In vivo pharmacology assays may serve to extend in vitro results or detect potentially important primary and/or secondary pharmacodynamic activities. Semi-quantitative or quantitative data can be generated on request.

Procedure Summary
Test substance is administered i.p. (10 mg/kg) to a group of 3 Long Evans derived male or female rats weighing 130 ± 20 g. During the subsequent 10 to 15 minute period, the number of animals exhibiting more than 10 seconds of chewing behavior (mouth and/or tongue movements) measured cumulatively are noted. Positive responses observed in 2 or more (³2) of 3 rats indicates possible central cholinergic activity. At 15 minutes after test substance administration, the number of animals exhibiting salivation are noted. Positive responses observed in 2 or more (³2) of 3 rats indicates possible peripheral cholinergic activity.

Suggested Testing
• n=5/group
• Safety non-GLP: 3 doses + vehicle control groups, n=4–10/group
• Agonist and/or antagonist effects assessed at initial doses of 30–100 mg/kg as aqueous solutions or finely homogenized suspensions in 2% Tween 80/distilled water and administered p.o. or i.p. to mice, rats, guinea pigs (10 mL/kg); i.v., i.p., or s.c. in
• Automatic minimum effective dose (MED) determined when activity >50% detected in accordance with stated criteria
• 3 dose levels in safety non-GLP procedures

Turnaround Time(s)
• For Acute Assays: 4 weeks from sample receipt
• For Subacute Assays: 6 weeks to 3 months

Literature
Lippman W and Pugsley TA. Arch Int Pharmacodyn. 227:324, 1977

Related Assay(s) (Item # - Assay Name - Species)
254500* - Muscarinic, Oxotremorine M - Rat
254000* - Muscarinic, Non-Selective, Central - Rat
104050* - Cholinesterase, Butyryl, CHLE - Human
104010 - Cholinesterase, Acetyl, ACES - Human
*provided by partner lab Eurofins Pharma Discovery Services

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)
* Arecoline, Methacholine, MK-771, Oxotremorine, Physostigmine, Pilocarpine, Piracetam

Last modified October 9, 2017