Model Name
Cardiovascular, Postural Hypotension, Tilt Response

Item Number
515350

Introduction
Postural hypotension, also known as orthostatic hypotension, is a result of impairment of circulatory reflexes required to compensate for sudden changes in body position from a prone to upright. In man, this is characterized by low blood pressure which can cause dizziness and fainting after standing or sitting up quickly. Postural hypotension may be an early side-effect when starting some psychotropic medicines, alpha- and/or beta-adrenergic or ganglionic blocking agents, angiotensin converting enzyme (ACE) inhibitors, etc., which impair circulatory reflexes by blocking transmission of the message from the autonomic nervous system to the heart and blood vessels.

Procedure Summary
Groups of 5 Wistar derived male rats weighing 250 ± 20 g are employed. Each animal is secured supine upon a tilt board in a horizontal position under sodium pentobarbital (40 mg/kg i.v.). The tail artery is cannulated with a polyethylene (PE160) catheter connected via a Statham (P 23 x L) pressure transducer to an NEC/San-Ei amplifier and data acquisition and analysis system (Power Lab 4/20). Upon recovery from anesthesia (4 to 5 hours later), resting mean arterial blood pressure and heart rate are recorded (0 minute) and test substance and/or vehicle is administered orally. After 60 minutes, resting mean arterial blood pressure and heart rate are again recorded. Each animal is then tilted 90 degrees, in approximately one second, to a vertical position for 2 minutes and the lowest mean blood pressure value (tilt response) is noted. A reduction ≥10% of the resting mean arterial blood pressure or tilt response or change ≥20% in resting heart rate is considered significant.

Suggested Testing
• n=5/group (study design dependent)
• Cardiovascular effects assessed at an initial dose of 30 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
Lee C-H et al. J Pharmacol Methods. 7:15, 1982

Related Assay(s) (Item # - Assay Name - Species)
302080* - Adrenergic α1D, IP1 - Human
302010* - Cytotoxicity, Adrenergic α1D - Human
203500* - Adrenergic α1, Non-Selective - Rat
203400* - Adrenergic α1D - Human
203200* - Adrenergic α1B - Rat
203100* - Adrenergic α1A - Rat
*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.

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 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)
Atropine, Clonidine, Mecamylamine, Pinacidil, * Prazosin

Graph(s)

Last modified September 18, 2017