Model Name
Cardiovascular, Telemetry

Item Number
516400

Introduction
Radio-telemetry systems offer the ability to measure cardiovascular and other activities in normal unrestrained rats under a controlled stress free environment. Consequently, test substances administered by various routes may be evaluated for potential adverse effects upon arterial blood pressure, heart rat, ECG, body temperature and physical activity.

Procedure Summary
Groups of 5 male Sprague-Dawley rats weighing 260 ± 20 gm are employed. The animals are anesthetized with pentobarbital sodium (30 mg/kg i.p.) and implanted with a Data Sciences International, Inc. (St. Paul, MN) telemetry device (PhysioTelTM PA-C40). The pressure catheter tip is placed in the abdominal aorta for measuring blood pressure and heart rate. Lead II ECG is obtained with subdermal needle electrodes in the upper right shoulder and the lower left inner thigh. The telemetry transmitter body is secured on the muscular layer of the right abdominal cavity. The animals are allowed to recover from surgery for at least 1 week. Vehicle and test substance are administered orally to the telemetric animals (administration route may be varied upon request). Three parameters (blood pressure, heart rate, and physical activity) are measured every 30 minutes post-dosing for 24 hours, or other intervals as requested. The mean ± SEM at each parameter at each time interval recorded during the 24 hours is calculated and unpaired Student’s t-test is applied for comparison between vehicle control and treatment groups. Differences are considered significant at P<0.05.

Suggested Testing
• n=5/group (study design dependent)
• Cardiotoxic effects 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)
215000* - Calcium Channel L-Type, Phenylalkylamine - Rat
214600* - Calcium Channel L-Type, Dihydropyridine - Rat
214510* - Calcium Channel L-Type, Benzothiazepine - Rat
203900* - Adrenergic α2, Non-Selective - Rat
203500* - Adrenergic α1, Non-Selective - 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.
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)
N/A

Graph(s)

Last modified September 18, 2017