Model Name
Cardiac Arrhythmia, Aconitine

Item Number
512060

Introduction
Aconitine is an alkaloid that predominantly modifies voltage-sensitive sodium channels. The result is a persistent activation of sodium channels at the steady state potential by blocking their inactivation. Aconitine, therefore, permanently depolarizes cardiac membranes causing a decrease of the delayed sodium repolarization current (INa).

Procedure Summary
Test substance is administered orally to a group of 5 Wistar male rats weighing 250 ± 20 g and anesthetized with pentobarbital sodium (45 mg/kg i.p.) 50 minutes later. Following an additional 10 minutes, infusion of aconitine (6 mg/0.5 ml/minute i.v.) is initiated. The time in seconds to onset of initial arrhythmia (deviation from normal sinus rhythm persisting for more than 5 seconds) is determined from ECG recordings. Increase in time to onset or arrhythmia by 50 percent or more (≥50%) relative to a concurrent control group of animals indicates significant protection.

Suggested Testing
- n=5/group (study design dependent)
- 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

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
*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)
* Quinidine

Last modified September 18, 2017