**Model Name**
Cough, Citric Acid-Induced

**Item Number**
508800

**Introduction**
Cough is the most common presenting symptom to general practitioners. A cough results from stimulation of the cough reflex through activation of receptors primarily in the airways. While cough is predominantly a protective mechanism, recurrent or persistent cough can be harmful and may result in airways trauma, cough syncope, rib fractures, urinary incontinence, hernias, back pain, etc. Reduction of non-productive cough may, therefore, be of benefit in prevention and treatment of airways trauma, cough syncope, rib fractures, urinary incontinence, hernias, back pain, etc.

**Procedure Summary**
Groups of 8 male/female Dunkin-Hartley guinea pigs weighing 500 ± 50 g are used. Animals are individually placed in a 4 liter sealed chamber equipped with an ultrasonic nebulizer for aerosol exposure to the cough inducing irritant and a microphone to amplify the cough produced sound. Test animals exposed to an aerosolized solution of 10% citric acid for 10 seconds that exhibit 10-20 coughs during a subsequent 5-min period (0-5 min, immediately after the citric acid aerosol administration) are selected. After resting for 48 hr, test articles are administered by gavage (PO). The animals are challenged with aerosolized 10% citric acid at 1 hr after dosing. The number of coughs over 0-10 min after each citric acid treatment will be recorded. Reduction of citric acid induced cough relative to vehicle control at corresponding time points and in comparison to pre-treatment value (pre-selection phase) for each observation time point will be used for determination of significant antitussive activity. One-way ANOVA and Dunnett’s test will serve as default tests to determine significant difference between groups; paired Student’s t-test will serve as default test to determine significant difference between pretreatment and post-treatment values. If considered necessary based on the collected data, different tests (e.g. nonparametric tests) may have to be applied. Significance is set at P<0.05 level.

**Suggested Testing**
- n=8/group (study design dependent)
- Doses may be administered PO
- Assessments available: Body weight and Number of coughs

**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)**
508850 - Antitussive Test (Capsaicin) - Guinea Pig

**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 are 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 Compounds
* Codeine, Dextromethorphan

Graphs

*P<0.05, treated vs. vehicle control; one-way ANOVA followed by Dunnett's test.

Last modified October 1, 2018

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/