Model Name
Thrombosis, Vena Cava, Thromboplastin-Induced

Item Number
578570

Introduction
Thrombotic cardiovascular diseases are the most common cause of death and disability in the developed world. Venous thrombosis is induced by ligation of the inferior vena cava in rats whose blood is made hypercoagulable by intravenous (IV) administration of tissue thromboplastin. The thromboplastin-induced venous thrombosis model is widely used to study molecular mechanisms as well as the efficacy of antithrombotic agents.

Procedure Summary
Groups of 6 Sprague-Dawley rats weighing 320 ± 30 g are used. Rats are anesthetized and the abdomen is surgically opened to expose the vena cava that is dissected free from surrounding tissue. Two loose sutures, about 1 cm apart, are prepared below the left renal vein. Test compound and/or vehicle are administered intravenously (IV) 5 minutes, intraperitoneally (IP) 30 minutes or orally (PO) 1 hour before the IV injection of thromboplastin. Thirty seconds after thromboplastin injection, stasis is established by tightening the sutures. After 15 minutes of stasis the formed thrombus is removed from the segment, scored on a scale of 1 – 4 (according to the Wessler technique), blotted on filter paper and weighed both immediately (wet weight) and after drying at 37 °C for 24 hours (dry weight). One-way ANOVA is used between each group and P< 0.05 indicates significant anti-thrombosis relative to the vehicle treated group.

Wessler technique thrombus scores are determined as follows:
0=fluid blood,
1=one or several small clots,
2=non occlusive thrombus filling 50% of the vascular segment,
3=non occlusive thrombus filling 75% of the vascular segment,
4=occlusive segment.

Suggested Testing
• n=6/group (study design dependent)
• Doses may be administered PO, IV, IP and SC
• Assessments available: Biomarkers and histology services may be performed upon request.

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

Literature
Millet, J. et al. The venous antithrombotic effect of LF 1351 in the rat following oral administration. Thromb Haemost. 67(1) 176-179, 1992

Related Assay(s)  (Item # - Assay Name - Species)
578400 - Thrombosis, Abdominal Aorta, Ferric Chloride-Induced - Rat

Modified Protocols
We will readily accommodate client-specified alterations.

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

Last modified November 20, 2017