Model Name
Septic Shock, Lipopolysaccharide, Rat

Item Number
576750

Introduction
Lipopolysaccharide (LPS), a glycoprotein from gram negative bacteria, activates innate immunity through toll-like receptor 4 (TLR4). Experimental LPS-induced sepsis model is commonly used to study the mechanisms of inflammation and mortality for septic shock.

Procedure Summary
Test substance is administered PO to a group of 10 Sprague Dawley rats weighing 220 ± 20 g one hour before challenge with E. Coli lipopolysaccharide (LPS, 20 mg/kg i.v.) resulting in 100% mortality. Mortality is recorded over a 3-day period. ANOVA followed by Dunnett's test is applied for comparison between vehicle and treatment groups. P<0.05 is considered significant.

Suggested Testing
- n=10/group (study design dependent)
- Doses may be administered PO, IV, IP and SC
- Assessments available: Body weight, Mortality, Cell populations by FACS, Biomarker analysis (protein or mRNA) and Histopathology

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

Literature

Related Assay(s) (Item # - Assay Name - Species)
576680 - Septic Shock, Lipopolysaccharide, Mouse - Mouse
576700 - Septic Shock, Lipopolysaccharide, Mouse - Mouse
576710 - Septic Shock, Lipopolysaccharide (without galactosamine), Mouse - Mouse

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)
* Dexamethasone 21-acetate
Graph(s)

- Vehicle, 10 mL/kg x1, PO
- Dexamethasone, 0.03 mg/kg x1, PO

Survival rate (%)

Hours after LPS

*P<0.05, treated vs. vehicle control; Fisher’s exact test.

Last modified December 22, 2017