Model Name
Pseudomonas aeruginosa Carbapenem resistant (LES 431), Peritonitis LD90-100

Item Number
608630

Introduction
This model assesses the efficacy of test articles at protecting against a lethal peritonitis infection with a carbapenem resistant strain. It can be used to evaluate small molecules, vaccines and biologics. This model is performed with a carbapenem resistant P. aeruginosa strain. The organism is a Liverpool epidemic strain (LES) and is a lung isolate from the parent of a cystic fibrosis patient (P Salunkhe JB 2005 PMCID: PMC1169510). It is resistant to imipenem, aztreonam, ceftazidime, piperacillin/tazobactam, amikacin, gentamicin, and ciprofloxacin (intermediate). The mechanism for carbapenem resistance is not fully understood and may be due to increased expression of AmpC and a defect in OprD (P Salunkhe JB 2005 PMCID: PMC1169510).

Procedure Summary
Groups of 10 immune competent mice are used. Each animal is inoculated with an intraperitoneally administered LD90-100 dose of pathogen with 5% mucin. Test substance and vehicle are administered one hour later. (Doses may be administered IV, SC, PO, IM, IP or by IV infusion.) Mortality is recorded daily during the following 7 days. Prevention of mortality in 50 percent or more (>50%) of the animals indicates significant activity. The Minimum Effective Dose (MED) is defined as the dose that results in survival of 50% (or more) of the test animals.

Turnaround Time(s)
6 weeks from sample receipt

Literature

Optional Services
Cytokine analysis, with Luminex, can be performed upon request.

Related Assay(s) (Item # - Assay Name - Species)
614068* - Pseudomonas aeruginosa, AmpC (LES 431, BCCM 27624) MIC - Bacteria
608645 - Pseudomonas aeruginosa Carbapenem resistant (LES 431) Lung Infection Model - Mouse
608655 - Pseudomonas aeruginosa Carbapenem resistant (LES 431) Thigh Infection Model - Mouse
*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 BSL2 laboratory in Taipei, Taiwan.

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.

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

Graph(s)

608630 Pseudomonas aeruginosa Carbapenem Resistant (LES 431)
Mouse Peritonitis, LD90-100
Colistin (CST) efficacy

![Graph showing survival (%)](image)

- Vehicle, 10 mL/kg, SC
- CST, 40 mpk, SC
- CST, 20 mpk, SC
- CST, 10 mpk, SC
- CST, 5 mpk, SC

Last modified November 20, 2017