Model Name
Pseudomonas aeruginosa Carbapenem Resistant (LES 431), Thigh Infection Model

Item Number
608655

Introduction
This assay assesses the antimicrobial efficacy of test articles in a thigh muscle infection model. The microbial counts in tissue are measured. 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 5 neutropenic mice are used. Animals are intramuscularly inoculated with pathogen suspension then test articles or vehicle are administered at time points after inoculation. (Doses may be administered IV, SC, PO, IM, IP or by IV infusion.) At 24 hr after the first treatment, animals are humanely euthanized and tissue is aseptically removed. Tissue is homogenized and pathogen counts are determined by plating to agar medium. Pathogen counts from treatment groups are compared to vehicle groups and the significance of an effect is determined.

Turnaround Time(s)
5 weeks from sample receipt

Literature

Optional Services
Analysis of cytokines (with Luminex) and PK exposure 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
608630 - Pseudomonas aeruginosa Carbapenem resistant (LES 431), Peritonitis LD90-100 - 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.

Reference Compound(s)
Colistin

For current details about our Company address and contact information, please reference our website
http://www.pharmacologydiscoveryservices.com/company-info/
608655 *Pseudomonas aeruginosa* carbapenem resistant
Strain LES 431
Thigh infection model
Colistin (CST) titration

![Graph showing log (CFU/g) thigh for different treatments](image)

**Last modified November 20, 2017**