**Model Name**  
Pseudomonas aeruginosa Carbapenem resistant (LES 431), Lung Infection Model

**Item Number**  
608645

**Introduction**  
This assay assesses the antimicrobial efficacy of test articles in a lung infection model with a carbapenem resistant strain. 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, cefazidime, 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 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 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**  
Tsai WC. et al., Am J Respir Crit Care Med. 170:1331–1339, 2004

**Optional Services**  
Analysis of cytokines (with Luminex) and PK exposure can be performed upon request. Histopathology of tissue samples may also be performed.

**Related Assay(s) (Item # - Assay Name - Species)**  
614068* - Pseudomonas aeruginosa, AmpC (LES 431, BCCM 27624) MIC - Bacteria  
608655 - Pseudomonas aeruginosa Carbapenem resistant (LES 431) Thigh 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/
608645  *Pseudomonas aeruginosa*, carbapenem resistant (LES 431)
Lung Infection Model
Colistin (CST) titration

![Graph showing Log (CFU/g) lung for different treatments.](image)

*** P< 0.001

Last modified November 20, 2017