**Model Name**  
Pseudomonas aeruginosa VIM-4 (FDA-CDC AR-BANK#0054), Lung Infection Model, CFU/g

**Item Number**  
608641

**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. *P. aeruginosa* can cause life-threatening lung, wound, and urinary tract infections as well as peritonitis and septicemia. This carbapenem resistant strain carries the following antimicrobial resistance (AMR) genes: aadB, catB7, OXA-50, PAO, strA, strB, tet(A) and VIM-4. The carbapenem resistance may be due to expression of the VIM-4 metallo-β-lactamase. It is resistant to β-lactam antibiotics, aminoglycosides, and quinolones. It is susceptible to colistin and amikacin. The FDA-CDC Antimicrobial Resistance Isolate Bank supplied this strain and the genome sequence annotation of AMR genes.

**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**  

**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)**  
614078* - Pseudomonas aeruginosa, VIM-4 (FDA-CDC AR-BANK#0054) MIC – Bacteria  
608651 - Pseudomonas aeruginosa VIM-4 (FDA-CDC AR-BANK#0054), Thigh Infection Model, CFU/g - Mouse  
608640 - Pseudomonas aeruginosa (ATCC 27853), Lung Infection Model, CFU/g – 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  
Reference Compound(s)

Colistin

Graph(s)

Last modified May 23, 2018