Model Name
Klebsiella pneumoniae NDM-1 (NCTC 13443), Lung Infection Model, CFU/g

Item Number
608574

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 NDM-1 metallo β-lactamase producing K. pneumoniae strain is resistant to amikacin, ciprofloxacin and β-lactam antibiotics (including Aztreonam). It is susceptible to tigecycline and colistin.

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)
6 weeks from sample receipt

Literature
DeRyke CA et al., Antimicrobial Agents and Chemotherapy 51:1481-1486, 2007

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)
612180* -  Klebsiella pneumoniae, NDM-1 (NCTC 13443) MIC  - Bacteria
608573 -  Klebsiella pneumoniae NDM-1 (NCTC 13443), Thigh 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.

Reference Compound(s)
Colistin

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

608574 *Klebsiella pneumoniae*, lung infection
Carbapenem resistant, NDM-1 (NCTC 13443)
Colistin (CST) titration

![Graph showing log (CFU/g) lung counts for different treatment groups with statistical significance indicated by *** P< 0.001.](image)

Last modified November 20, 2017