Model Name
Acinetobacter baumannii NDM-1 (FDA-CDC AR-BANK#0088), Lung Infection Model, CFU/g

Item Number
608802

Introduction
This model assesses the antimicrobial efficacy of test articles in a lung infection model with carbapenem resistant A. baumannii. Microbial counts in the lung tissue are measured. This carbapenem resistant A. baumannii strain produces aac(3)-IIa, NDM-1, OXA-64, tet(B), strA, strB and sul2 β-lactamases. It is resistant to β-lactam antibiotics, aminoglycosides, and quinolones. It is susceptible to colistin and tigecycline. The FDA-CDC Antimicrobial Resistance Isolate Bank supplied this strain.

Procedure Summary
Groups of 5 neutropenic mice are used. Animals are inoculated intranasally with pathogen suspension then test articles or vehicle is 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
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)
600320* - Acinetobacter baumannii, NDM-1 (FDA-CDC AR-BANK#0088) MIC - Bacteria
608832 - Acinetobacter baumannii NDM-1 (FDA-CDC AR-BANK#0088), Thigh Infection Model, CFU/g
*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 Compounds
Colistin, Tigecycline

Graph

Last modified September 27, 2018