Model Name
Staphylococcus aureus USA300 MRSA (BAA-1717), Wound Infection, CFU/g

Item Number
608200

Introduction
This assay assesses the antimicrobial efficacy of test articles in an excisional wound infection model with a community acquired MRSA. USA300 S. aureus is a community-associated epidemic MRSA that causes rapidly progressive and fatal diseases. This strain, originally named TCH1516, is resistant to erythromycin and most classes of β-lactam antibiotics. It is susceptible to quinolones, vancomycin, daptomycin, linezolid, and carbapenems.

Procedure Summary
Groups of 5 immune competent mice are used. Animals are anesthetized, shaved, and a wound is generated with a sharp punch (ID 12 mm) then inoculated with S. aureus culture. Test substance and vehicle are administered at time intervals after infection. (Doses may also be administered topically or by IV, SC, PO, IM, IP or IV infusion). The animals are euthanized by CO2 asphyxiation at specified time intervals after treatment initiation (24 hr to two weeks), the wound is excised and microbial counts in the wound tissue is enumerated. Pathogen counts from treatment groups are compared to vehicle groups and the significance of an effect is determined.

Turnaround Time(s)
5-6 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)
604045* - Staphylococcus aureus, USA300 MRSA (TCH1516, BAA-1717) MIC – Bacteria
608190 - Staphylococcus aureus USA300 MRSA (BAA-1717), Dermal Infection - 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)
Mupirocin

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Graph(s)

608200 Staphylococcus aureus USA300 MRSA (BAA-1717), Wound Infection, CFU/g

Log (CFU/wound)

Vehicle: 2 hr, 26 hr, 3 days, 7 days, 14 days
Mupirocin 2%: 26 hr, 3 days, 7 days, 14 days

[Dosing pattern: q8h x 3]

Last modified February 20, 2018

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