**Model Name**  
Staphylococcus aureus USA300 MRSA (BAA-1556), Dermal Infection

**Item Number**  
608207

**Introduction**  
This model evaluates the antimicrobial efficacy of test articles for treatment of superficial skin infections with a community acquired MRSA. USA300 S. aureus is a community-associated epidemic MRSA that causes rapidly progressive and fatal diseases. This MDR strain, originally named FPR 3757, is resistant to mupirocin, quinolones, macrolides and most classes of β-lactam antibiotics. It is susceptible to fusidic acid and also vancomycin, daptomycin, linezolid, and carbapenems.

**Procedure Summary**  
Groups of 5 immune competent mice are used. The animals are anesthetized, the fur on the back is removed with an electric shaver, and the epidermal layer is disrupted with an abrasive paper. Infection is initiated by placing a droplet containing pathogen suspension on the wound area. Test article is administered at timepoints after infection. (Doses may also be administered topically or by IV, SC, PO, IM, IP or IV infusion.) At 24 after the first treatment, animals are humanely euthanized and the skin 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**  
Cytokine measurement (with Luminex) and histopathology may also be performed upon request.

**Related Assay(s)  (Item # - Assay Name - Species)**  
604055* - Staphylococcus aureus, USA300 MRSA (FPR3757, BAA-1556) MIC - Bacteria  
608206 - Staphylococcus aureus USA300 MRSA (BAA-1556), Peritonitis, LD90-100 - Mouse  
608208 - Staphylococcus aureus USA300 MRSA (BAA-1556), Thigh Infection, 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)**  
Fusidic acid

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Graph(s)

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