**Efficacy of AFN-1252 and Vancomycin in the Mouse Subcutaneous Abscess Model with a Methicillin-Resistant S. aureus**

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### Methods and Materials

**Background:** AFN-1252, a novel-antibiotic, inhibits the bacterial fatty acid and lipoteichoic acid synthesis. It is a promising agent for the treatment of MRSA infections due to its novel mechanism of action and promising in-vitro and in-vivo activity against resistant strains. This study evaluated the efficacy of AFN-1252 in a murine subcutaneous abscess model.

**Methods and Materials:**
- **Animals:** Female 5-6 week old CD-1 mice were used in the studies.
- **Treatment:** Mice were rendered neutropenic by a single IP injection of cyclophosphamide (150 mg/kg) on day -4 prior to infection.
- **Inoculum:** Inoculum: Female CD-1 mice were rendered neutropenic by a single IP injection of cyclophosphamide (150 mg/kg) on day -4 prior to infection.
- **Abscesses:** Abscesses were formed on the dorsal surface of CD-1 mice following subcutaneous injection of methicillin-resistant *S. aureus*.
- **Inoculation:** Inoculation:
  - **CFU/mL:** 6.5 x 10^6
  - **Vanco 30 mg/kg IP:** 30 mg/kg IP bid exhibited a 4.4 log CFU reduction from the WFI vehicle.
  - **AFN-1252, administered twice-a-day (bid) resulted in a 5.89, 5.24 and 2.5 log reduction when dosed at 10, 30 and 100 mg/kg, respectively.

### Results

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### Summary and Conclusions

- **AFN-1252** is a novel-staphylococcal agent acting by a novel mechanism of action involving the bacterial fatty acid and lipoteichoic acid (FAS II) pathway.
- **Vancomycin** is a well-known agent against MRSA and serves as a control for comparison.
- **AFN-1252** exhibited potent activity against MRSA strains with no cross resistance and a low frequency of resistance compared to other antibiotics such as vancomycin and fluoroquinolones.

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### References