Activity of AFN-1252, a Fibrin Inhibitor with Potent Activity against S. aureus (SA) and Coagulase-Negative Staphylococcus spp. (CoNS), Including Multidrug-Resistant Strains

**ABSTRACT**

Background: SA and CoNS are responsible for a wide variety of infections. Infections with AFN-1252 specifically targets SA and CoNS without significant activity against other bacteria. In vitro studies have shown AFN-1252 inhibits FabI, an enzyme critical to fatty acid biosynthesis in Staphylococcus. The activity of AFN-1252 against CoNS, methicillin-resistant (MSSA) and -resistant (MRSA) SA, and including significant contemporary isolates was tested that included 574 patient isolates was tested that included MSSA (154), MRSA (163) and molecularly characterized (MC) isolates. The narrow bacterial fatty acid biosynthesis inhibition by AFN-1252 is currently in clinical development.

Methods: A globally diverse collection (35 countries) of S. aureus strains (including SA, MRSA (163) and molecularly characterized (MC) isolates) were determined using CLSI and EUCAST ranges and interpretive criteria for comparators were determined using CLSI and EUCAST criteria. Methods: The molecularly characterized isolates included 54% SA, 45% MS-CoNS (17) and 1% MSSA (154). AFN-1252 was supplied as the powder and was tested over 12 log, dilutions (0.001 – 2 µg/ml). Additional comparator antimicrobial agents included the oxacillin test results.

**RESULTS**

Susceptibility Test Methods: The antibiotic was supplied and was tested over 12 log, dilutions (0.001 – 2 µg/ml). AFN-1252 was supplied as the powder and was tested over 12 log, dilutions (0.001 – 2 µg/ml). Additional comparator agents included the oxacillin test results.

**MATERIALS AND METHODS**

**CONCLUSIONS**

In this study, AFN-1252 was shown to have significant activity against a diverse group of Staphylococcus pathogens, including endemic MRSA strains that are currently circulating in the hospital and community environments worldwide.

- Clinical isolates of Staphylococcus spp. were highly susceptible to AFN-1252, with MIC50/90 ≤0.015/0.12 µg/ml observed among CoNS.
- AFN-1252 retained excellent potency against molecularly characterized isolates. amid positive breakpoints and MIC50, values identical to the MRSA clinical susceptibility testing.