

CEM-102 (Fusidic Acid) Maintains Potency against Resistant MRSA and Prevalent Hospital Acquired, Community Acquired, and Epidemic MRSA Clones

Abstract E-1559

C.M. Pillar, M.K. Torres, D.F. Sahm and P. Fernandes

Eurofins Medinet, Chantilly, VA¹, Cempra Pharmaceuticals, Chapel Hill, NC²

Background:

: MRSA, a prevalent pathogen of hospital and community acquired infections, can be difficult to treat due to resistance. Recently, resistance has emerged to commonly utilized anti-MRSA agents (e.g. linezolid [LZD], daptomycin [DAP], and vancomycin [VAN]) illustrating the need for new agents. CEM-102 (fusidic acid) is currently undergoing clinical development for the treatment of skin infections in the US. This study evaluates the *in vitro* activity of CEM-102 against prevalent community-acquired, hospital-acquired, and epidemic clones including isolates non-susceptible (NS) to anti-MRSA agents .

Methods:

56 MRSA from the NARSA and Eurofins Medinet repositories were tested for susceptibility to CEM-102 and comparators by broth microdilution according to current CLSI guidelines. Isolates included those with rare resistance phenotypes (VISA/VRSA [n=10], LZD and DAP NS isolates [n=20]) and isolates from prevalent community (USA300/400 [n=10]), hospital (USA100/800 [n=10]), and epidemic clones (e.g. Iberian, UK-EMRSA 15/16 [n=5]).

Results:

Against the selected resistant MRSA, CEM-102 had an MIC range of 0.06-8 mg/mL with an MIC₅₀ and MIC₉₀ of 0.12 mg/mL. With the exception of 1 VISA isolate (with an MIC of 1 mg/mL), 2 DAP NS isolates (with MICs of 4 mg/mL), and 1 LZD NS isolate (with an MIC of 8 mg/mL), CEM-102 MICs were 0.06-0.12 mg/mL against MRSA with rare but emerging resistance phenotypes. Against a subset of 10 community, 10 hospital, and 5 epidemic clones, CEM-102 MICs were 0.06-0.12 mg/mL.

Conclusions:

CEM-102 had potent *in vitro* activity against MRSA NS to currently utilized agents (VAN, LZD, and DAP). CEM-102 was also active against USA100 and USA300 MRSA, clones of MRSA most likely to be encountered clinically in the US today. Based on its potency and activity against established and emerging resistance phenotypes among MRSA, these results highlight the potential of CEM-102 for the treatment of MRSA in the US.