

# In Vitro Activity Of Fusidic Acid (CEM-102) Against Resistant Strains Of *Staphylococcus aureus*

Abstract E-1561

J. DUBOIS<sup>1</sup>, P. FERNANDES<sup>2</sup>;

<sup>1</sup>M360, Sherbrooke, Canada, <sup>2</sup>Cempra Pharmaceutical Inc., Chapel Hill, NC

## Background:

**CEM-102** (fusidic acid) is being developed for the treatment of acute bacterial skin and skin structure infections (ABSSSI). The activity against a variety of resistant strains of *Staphylococcus aureus* was investigated.

## Methods:

The *in vitro* activity of **CEM-102** was compared with that of telithromycin, azithromycin, erythromycin, levofloxacin, linezolid and doxycycline against a total of 272 resistant *S. aureus* by agar dilution procedures (CLSI, M7-A7, M100-S18). The tested strains included *S. aureus* MRSA (*mecA* genotype; 176 isolates), macrolide-resistant (*ermA, B, C* genotype or MLSb-resistant; 58) and ciprofloxacin-resistant (*gyrA* and *parC* genotype; 38).

## Results:

Against *S. aureus* MRSA (*mecA*), **CEM-102** (MIC<sub>90</sub> 0.25 mg/L) and telithromycin (MIC<sub>90</sub> 0.06 mg/L) were more active than doxycycline (MIC<sub>90</sub> 1 mg/L), linezolid (MIC<sub>90</sub> 2 mg/L), levofloxacin (MIC<sub>90</sub> 16 mg/L), azithromycin (MIC<sub>90</sub> >32 mg/L) and erythromycin (MIC<sub>90</sub> >32 mg/L). **CEM-102** (MIC<sub>90</sub> 0.25 mg/L) was significantly superior to linezolid (MIC<sub>90</sub> 2 mg/L), levofloxacin (MIC<sub>90</sub> 4 mg/L), telithromycin (MIC<sub>90</sub> 4 mg/L), azithromycin (MIC<sub>90</sub> >32 mg/L), and erythromycin (MIC<sub>90</sub> >32 mg/L) against macrolide-resistant *S. aureus* (*ermA, B, C* genotype or MLSb-resistant). Against ciprofloxacin-resistant *S. aureus* (*gyrA* and *parC* genotype), **CEM-102** (MIC<sub>90</sub> 0.25 mg/L) and telithromycin (MIC<sub>90</sub> 0.06 mg/L) were more active than doxycycline (MIC<sub>90</sub> 1 mg/L), linezolid (MIC<sub>90</sub> 2 mg/L), azithromycin (MIC<sub>90</sub> 16 mg/L), levofloxacin (MIC<sub>90</sub> >32 mg/L), and erythromycin (MIC<sub>90</sub> >32 mg/L).

## Conclusions:

These data confirm the interesting activity of **CEM-102** against resistant *S. aureus*. Being the only member of a class of antibiotics called fusidanes, **CEM-102** is active against methicillin resistant and susceptible *S. aureus*, including CA- and HA-MRSA, showing no cross-resistance with any other class of antibiotic.