In Vitro Activity of CEM-101, a New Ketolide Antibiotic, Against *Chlamydia trachomatis* and *Chlamydia pneuomoniae*

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Chlamydia pneumoniae is well recognized as an important pathogen of respiratory tract infections worldwide, being responsible for almost 10% of cases of community-acquired pneumonia. *In vitro* activity of the macrolides against *C. pneumoniae* varies, with clarithromycin showing the lowest MICs followed by azithromycin. The ketolides are a new class of macrolide antibiotics with a 3-keto function instead of the cladinose sugar. The ketolides are acid stable and have activity against a broad range of respiratory pathogens, including multi-resistant pneumococci, *H. influenzae*, *Legionella* species, *M. pneumoniae*, and *Chlamydia sp*. Available data on the *in vitro* activity of a new ketolide, CEM-101 (Cempra Pharmaceuticals), are limited. We therefore compared the *in vitro* activities of CEM-101 with those of azithromycin, clarithromycin, telithromycin and doxycycline against 10 isolates of *Chlamydia pneumoniae* and 10 strains of *C. trachomatis* in HEp-2 cells. The MIC at which 50% and 90% of the isolates of *Chlamydia pneumonia* are inhibited by CEM-101 was 0.25 µg/ml (range: 0.25 to 1.0 µg/ml). The MIC at which 50% and 90% of the strains of *C. trachomatis* were inhibited was 0.25 µg/ml (range: 0.125 to 0.5 µg/ml). The MIC_{90}s for both *C. trachomatis* and *C. pneumoniae* against azithromycin, clarithromycin, telithromycin, and doxycycline were 0.125, 0.06, 0.06, 0.06 µg/ml, respectively. The MICs of CEM-101 were very consistent from isolate to isolate, varying by only one or two dilutions. This is especially impressive in view of the wide geographical distribution of the isolates tested. These results appear to indicate that CEM-101 is an effective antibiotic that should play a role in the treatment of *C. trachomatis* and respiratory tract infections caused by *C. pneumoniae*.