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# P0106 Activity of TP-6076 against carbapenem-resistant Acinetobacter baumannii isolates collected from inpatients in Greek hospitals

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**Background:** TP-6076 is a synthetic fluorocycline antibiotic that inhibits bacterial protein synthesis. The aim of this study was to evaluate its activity against carbapenem resistant *Acinetobacter baumannii* clinical isolates.

**Materials/methods:** The *in vitro* activity of TP-6076 and comparator antibiotics was tested against carbapenem-resistant *A. baumannii* strains isolated from clinical samples in 13 Greek hospitals between 2015 and 2017. Broth microdilution plates prepared in house were used to determine minimum inhibitory concentration (MIC) values for TP-6076 and comparators (tigecycline, minocycline, meropenem, ceftazidime-avibactam, amikacin, gentamicin, ciprofloxacin, and colistin) according to current CLSI guidelines for broth microdilution testing. The breakpoints for minocycline, meropenem, amikacin, gentamicin, colistin and ciprofloxacin were defined according to the CLSI guidelines. Ceftazidime's breakpoints were applied to ceftazidime-avibactam for comparisons in this study only. Non-susceptibility to tigecycline (>2 mg/L) was defined applying the US Food and Drug Administration criteria for Enterobacteriaceae to *A. baumannii*.

**Results:** 121 A. baumannii non-duplicate isolates were tested. TP-6076 had the lowest MIC values among the 9 antibiotics. The MIC50 and MIC90 of TP-6076 were 0.03 and 0.06 mg/L, respectively. The highest MIC value for TP-6076 was 0.12 mg/L, seen in 7 isolates; all 7 were resistant to meropenem and ciprofloxacin, all were non-susceptible to gentamicin, 6 were non-susceptible to cefazidime-avibactam and amikacin, 4 to tigecycline, and 3 to minocycline and colistin. The second most active antibiotic was tigecycline (MIC90 2 mg/L), followed by minocycline (MIC90 8 mg/L). TP-6076 exhibited MIC90 values that were one dilution lower against tigecycline- and minocycline-susceptible isolates than resistant ones (Table 1). There was no difference in MIC90 for colistin-susceptible or -resistant isolates.

**Conclusions:** TP-6076 exhibited greater antimicrobial activity *in vitro* against carbapenem-resistant *A. baumannii* than comparator antibiotics.

Table.

| MIC (mg/L) | | | MIC (mg/L) | | |
|---|---|---|---|---|---|
| **Range** | **$MIC_{50}$** | **$MIC_{90}$** | **Range** | **$MIC_{50}$** | **$MIC_{90}$** |
| **Colistin R/I (N=52)** | | | **Colistin S (N=69)** | | |
| 0.004-0.12 | 0.03 | 0.06 | ≤0.002-0.12 | 0.015 | 0.06 |
| | | | | | |
| **Minocycline R/I (N=14)** | | | **Minocycline S (N=107)** | | |
| 0.004-0.12 | 0.03 | 0.12 | ≤0.002-0.12 | 0.03 | 0.06 |
| | | | | | |
| **Tigecycline R/I (N=11)** | | | **Tigecycline S (N=110)** | | |
| 0.03-0.12 | 0.06 | 0.12 | ≤0.002-0.12 | 0.03 | 0.06 |

Abbreviations: MIC minimum inhibitory concentration, R resistant, I intermediate resistant, S susceptible