### Materials and Methods

A total of 106 isolates were selected from a recent collection of strains isolated from patients having UTI. The source of the isolates included urine (82 isolates), bloodstream (17 isolates), and blood (7 isolates). All isolates were identified to species level using standard phenotypic and genotypic methods. The antimicrobial susceptibility testing was performed using the broth microdilution method (M07-A8, CLSI, 2009). The reference antimicrobial agents included amikacin, ciprofloxacin, ceftazidime, imipenem, and trimethoprim/sulfamethoxazole. The MICs were determined using standard techniques described in the CLSI document.

### Results

The MIC data for ACHN-490 and the reference agents against Enterobacteriaceae species are presented in Table 2. ACHN-490 exhibited excellent activity against both Gram-negative and Gram-positive pathogens, including species commonly associated with UTI. The most common resistant subsets were extended-spectrum beta-lactamase (ESBL) and AmpC producers. Resistance mechanisms to these and other agents included AmpC production, carbapenemases, extended-spectrum beta-lactamases (ESBL), and integron-mediated resistance. The MIC data for ACHN-490 against these resistant subsets are presented in Table 3. ACHN-490 exhibited potent activity against all resistant subsets, including ESBL and AmpC producers.

### Discussion

ACHN-490 exhibited potent activity compared to several Gram-positive and -negative pathogens commonly isolated from patients with UTIs, including amikacin-resistant Staphylococcus aureus (MRSA). ACHN-490 also exhibited high activity against Enterobacteriaceae species, including ESBL and AmpC producers.

### Conclusion

ACHN-490 is a neoglycoside, a next-generation aminoglycoside, in clinical development. This agent has been shown to have potent activity against both Gram-negative and Gram-positive pathogens, including species commonly associated with UTI. The MIC data for ACHN-490 against these resistant subsets are presented in Table 3. ACHN-490 exhibited potent activity against all resistant subsets, including ESBL and AmpC producers.

### References