# Tigecycline Activity Tested Against 22,950 Bloodstream Infection Isolates Worldwide

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## AMENDED ABSTRACT

**Objective**:

To assess the activity of tigecycline (formerly GAR936), a novel glycylcycline, against recent bloodstream infection (BSI) pathogen isolates from six continents. Frequency of clinical occurrence of these pathogens was determined and their antibiograms assessed using NCCLS reference broth microdilution methods.

**Methods**:

A total of 22,950 strains were tested by the M7-A6 (2003) method with interpretations from M100-S14 (2004). A tigecycline susceptible (S) breakpoint was defined as ≤ 2 mg/L for comparison purposes only, although ≤ 4 mg/L has been used for tetracyclines. The rank order of pathogens was: *S. aureus* (SA; 34.2%), coagulase-negative staphylococci (CoNS; 14.1%), *E. coli* (EC; 13.2%), enterococci (ENT; 12.7%), *Klebsiella* spp. (KSP; 5.3%), *P. aeruginosa* (PSA; 4.0%), *Enterobacter* spp. (EBS; 2.9), ß-haemolytic streptococci (ßST; 2.8%); *S. pneumoniae* (SPN; 2.4%), and viridans group streptococci (VgS; 1.6%). More than 20 comparison agents were tested including tetracycline (TC) and ciprofloxacin (CIP).

**Results**:

BSI pathogens (Gram-positive and Enterobacteriaceae) tested against tigecycline are shown in the table.

| Organism (no. tested) | Tigecycline 50% | Tigecycline 90% | % inhibited at: ≤0.5 | 1 | (2)[a] | 4 | % S (drug) |
|---|---|---|---|---|---|---|---|
| SA (7,842) | ≤0.12 | 0.5 | >99 | >99 | 100 | - | 64(CIP) |
| CoNS (3,230) | 0.25 | 0.5 | 97 | >99 | 100 | - | 83(TC) |
| EC (3,022) | 0.25 | 0.25 | >99 | >99 | >99 | 100 | 65(TC) |
| ENT (2,921) | ≤0.12 | 0.25 | >99 | >99 | >99 | 100 | 38(TC) |
| KSP (1,218) | 0.5 | 1 | 84 | 95 | 98 | >99 | 89(CIP) |
| EBS (661) | 0.5 | 2 | 77 | 89 | 95 | >99 | 82(TC) |
| ßST (639) | ≤0.12 | ≤0.12 | 100 | - | - | - | 45(TC) |
| SPN (562) | ≤0.12 | ≤0.12 | 98 | 100 | - | - | 45(TC) |
| VgS (371) | ≤0.12 | ≤0.12 | >99 | 100 | - | - | 69(TC) |

a. S breakpoint (provisional).

Tigecycline was consistently active against TC-resistant (R) strains (89 - 100% S versus 45 - 90%). $MIC_{50}$;% S results for other BSI species were: *P. mirabilis* (4 mg/L;10), *Acinetobacter* spp. (0.5 mg/L;77), *Serratia* spp. (1 mg/L;81), *S. maltophilia* (1 mg/L;77) and indole-positive Proteae (1 mg/L;54). Tigecycline exhibited a broader spectrum of activity against BSI isolates when compared to CIP, TC, older aminoglycosides and imipenem. Tigecycline was not active against PSA ($MIC_{50}$, 8 mg/L; 4.0% of BSI isolates).

**Conclusions**:

Tigecycline exhibited a wide spectrum of antimicrobial potency versus BSI isolates collected worldwide. Serious infections in nosocomial environments should benefit from tigecycline among the investigational Phase 3 agents focused on R strains.

## INTRODUCTION

Clinically significant bacteremia is a serious consequence of a wide variety of initially localized infections and treatment is often urgent. Furthermore, the increased complexity of patients requiring hospitalization and the widespread use of indwelling devices has created higher risks for bacteremia. Inadequate empirical antimicrobial therapy is associated with adverse outcomes, including increased mortality, and antimicrobial resistance is a common reason for inadequate therapy. In this situation, knowledge of the most likely causative organisms and their expected resistance patterns can increase the probability of selecting an effective antimicrobial for empirical treatment.

Tigecycline is a semisynthetic glycylcycline derived from the minocycline molecule. Tigecycline has documented activity against tetracycline-resistant (tet-R) Gram-positive and Gram-negative pathogens refractory by both efflux and ribosomal protection mechanisms. The present study was conducted to evaluate the in vitro activity of tigecycline in comparison to tetracycline and other antimicrobial agents against clinical bacterial isolates collected from patients with bloodstream infections.

## MATERIALS AND METHODS

A total of 22,950 Gram-positive and -negative bacterial isolates recovered from patients hospitalized with clinically significant bacteremia were processed. Consecutively acquired, non-duplicate patient isolates were submitted from >70 participating medical centers representing 29 countries in the five continents of Asia, Australia, Europe, South America and North America. The rank order of pathogens was: *S. aureus* (7,842 isolates), coagulase-negative staphylococci (3,230), *Escherichia coli* (3,022), *Enterococcus* spp. (2,291), *Klebsiella* spp. (1,218), *Pseudomonas aeruginosa* (920), *Enterobacter* spp. (661), ß-haemolytic streptococci (639), *Streptococcus pneumoniae* (562), and viridans group streptococci (371).

All isolates were identified by the participant laboratories and confirmed by the monitoring facility (JMI Laboratories, North Liberty, Iowa). Each strain was tested by a reference broth microdilution method against more than 30 antimicrobial agents; only selected agents with the widest potential clinical utility and in vitro activity are reported here. Interpretation of quantitative MIC results was in accordance with Clinical and Laboratory Standards Institute (CLSI; formerly National Committee for Clinical Laboratory Standards [NCCLS]) methods and criteria. A tigecycline susceptible (S) breakpoint was defined as ≤ 2 mg/L for comparison purposes only, although ≤ 4 mg/L has been used for tetracyclines. Current quality control (QC) testing was performed using the following organisms: *S. pneumoniae* ATCC 49619, *S. aureus* ATCC 29213, *E. coli* ATCC 25923, and *P. aeruginosa* ATCC 27853.

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## RESULTS

- The most frequently isolated pathogen from bloodstream infections in medical centers worldwide in the 2000-2004 period was *S. aureus* (34.2%), followed by coagulase-negative staphylococci (CoNS, 14.1%), *E. coli* (13.2%), and *Enterococcus* spp. (12.7%). These four pathogens accounted for 74.2% of the isolates collected during the study period and >99% of these isolates were inhibited by ≤ 1 mg/L of tigecycline (Table 1).

- Tigecycline was highly active against *S. aureus* isolates ($MIC_{50}$, 0.12 mg/L and $MIC_{90}$, 0.5 mg/L) independently of their susceptibility to oxacillin (Table 2). The highest tigecycline MIC value was 2 mg/L and 99.3% of isolates were inhibited at 0.5 mg/L of tigecycline. Resistance to oxacillin was observed in 34.0% of *S. aureus* strains.

- Similar to *S. aureus*, both oxacillin-resistant and -susceptible coagulase-negative staphylococci were highly susceptible to tigecycline ($MIC_{50}$, 0.25 mg/L and $MIC_{90}$, 0.5 mg/L). Resistance to oxacillin was observed in 76.7% of CoNS strains. Vancomycin ($MIC_{90}$, 2 mg/L) and linezolid ($MIC_{90}$, 1 mg/L) were active against all CoNS isolates at the susceptible breakpoints, and 99.8% of isolates were inhibited at 1 mg/L of tigecycline (Tables 1 and 2).

- Tigecycline was the most active compound against *Enterococcus* spp. strains ($MIC_{50}$, 0.12 mg/L and $MIC_{90}$, 0.25 mg/L). Tigecycline was eight-fold more potent than vancomycin ($MIC_{50}$, 1 mg/L and $MIC_{90}$, >16 mg/L) and 16-fold more potent than linezolid ($MIC_{50}$ and $MIC_{90}$ at 2 mg/L) against this pathogen (Table 2).

- ß-haemolytic streptococcal isolates were highly susceptible to tigecycline. The highest tigecycline MIC value was 0.5 mg/L and the vast majority of strains (95%) were inhibited at ≤ 0.12 mg/L of tigecycline (Table 2).

- Tigecycline was highly active against *S. pneumoniae* and viridans group streptococci ($MIC_{50}$ and $MIC_{90}$ of ≤ 0.12 mg/L), including isolates resistant to penicillin and/or tetracycline and/or erythromycin (Table 2).

- Among the most frequent Enterobacteriaceae species isolated from bloodstream infections, e.g. *E. coli*, *Klebsiella* spp. and *Enterobacter* spp., tigecycline $MIC_{50}$ values ranged from 0.25 to 0.5 mg/L, while $MIC_{90}$ values ranged from 0.5 to 2 mg/L (Table 3).

- An ESBL phenotype was detected in 6% of *E. coli* and 17% of *Klebsiella* spp., while 20% of *Enterobacter* spp. were resistant to ceftazidime. In addition, resistance to ciprofloxacin was detected in 17.2% of *E. coli*, 9.3% of *Klebsiella* spp. and 11.8% of *Enterobacter* spp.

- *P. aeruginosa* strains showed high rates of resistance to most antimicrobial agents tested. Polymyxin B was the most active compound ($MIC_{50}$ and $MIC_{90}$, ≤ 1 mg/L; 99.8% susceptible) against this pathogen and tigecycline MIC values were generally elevated (Table 3).

- Tigecycline was highly active against *Acinetobacter* spp. and *S. maltophilia* strains ($MIC_{50}$, 1 mg/L and $MIC_{90}$, 2 mg/L for both pathogens), but showed limited activity against *P. mirabilis* ($MIC_{50}$ and $MIC_{90}$, at 4 mg/L; Table 1).

- Resistance to tetracycline did not significantly affect tigecycline activity (Table 4).

**Table 1.** Potency of tigecycline against the main bacterial pathogens isolated from bloodstream infections worldwide.

| Organism (no. tested/% of total) | Cumulative % inhibited at (mg/L): ≤0.12 | 0.25 | 0.5 | 1 | 2 | 4 | 8 |
|---|---|---|---|---|---|---|---|
| 1. *Staphylococcus aureus* (7,842/34.2) | 53 | 88 | >99 | >99 | 100 | - | - |
| 2. *Coagulase-negative staphylococci* (3,230/14.1) | 46 | 77 | 97 | >99 | 100 | - | - |
| 3. *Escherichia coli* (3,022/13.2) | 47 | 90 | >99 | >99 | 100 | - | - |
| 4. *Enterococcus* spp. (2,921/12.7) | 62 | 92 | >99 | >99 | >99 | 100 | - |
| 5. *Klebsiella* spp. (1,218/5.3) | 1 | 33 | 84 | 95 | 98 | 100 | - |
| 6. *Pseudomonas aeruginosa* (920/4.0) | <1 | <1 | 1 | 2 | 5 | 22 | 69 |
| 7. *Enterobacter* spp. (661/2.9) | 2 | 22 | 77 | 89 | 95 | 100 | - |
| 8. ß-haemolytic streptococci (639/2.8) | 95 | >99 | 100 | - | - | - | - |
| 9. *Streptococcus pneumoniae* (562/2.4) | 94 | 97 | 98 | 100 | - | - | - |
| 10. Viridans group streptococci (371/1.6) | 94 | 98 | >99 | 100 | - | - | - |
| 11. *Proteus mirabilis* (260/1.1) | 0 | <1 | 2 | 10 | 46 | 90 | >99 |
| 12. *Serratia* spp. (238/1.0) | <1 | <1 | 18 | 81 | 96 | 98 | 100 |
| 13. *Acinetobacter* spp. (235/1.0) | 13 | 35 | 54 | 77 | 96 | >99 | 100 |
| 14. *Stenotrophomonas maltophilia* (161/0.7) | 1 | 8 | 38 | 77 | 94 | 98 | 100 |

**Table 2.** Antimicrobial activity of tigecycline against Gram-positive bacteria isolated from bloodstream infections.

| Organism (no. tested/antimicrobial agent | MIC (mg/L) 50% | 90% | Range | % susceptible[a] | % resistant[a] |
|---|---|---|---|---|---|
| *Staphylococcus aureus (7,842)* | | | | | |
| Tigecycline | ≤0.12 | 0.5 | ≤0.12-2 | -[b] | - |
| Tetracycline | ≤4 | 4 | ≤0.25->8 | 90.2 | 9.3 |
| Oxacillin | 0.5 | >2 | ≤0.06->8 | 66.0 | 34.0 |
| Clindamycin | 0.12 | >8 | ≤0.06->8 | 74.2 | 25.6 |
| Levofloxacin | 0.25 | >4 | ≤0.03->4 | 65.1 | 33.6 |
| Trimethoprim/Sulfamethoxazole | ≤0.5 | ≤0.5 | ≤0.5->2 | 95.7 | 4.3 |
| Quinupristin/Dalfopristin | 0.5 | 0.5 | ≤0.06->8 | 99.8 | 0.1 |
| Teicoplanin | ≤2 | ≤2 | ≤0.12-16 | 99.9 | 0.0 |
| Vancomycin | 1 | 1 | ≤0.12-4 | 100.0 | 0.0 |
| Linezolid | 2 | 2 | 0.12-16 | 100.0 | - |
| *Coagulase-negative staphylococci (3,230)* | | | | | |
| Tigecycline | 0.25 | 0.5 | ≤0.12-2 | - | - |
| Tetracycline | ≤4 | >8 | ≤0.25->8 | 82.8 | 16.6 |
| Oxacillin | >2 | >8 | ≤0.06->8 | 23.3 | 76.7 |
| Clindamycin | 0.12 | >8 | ≤0.06->8 | 63.1 | 36.4 |
| Levofloxacin | 2 | >4 | ≤0.03->4 | 48.1 | 44.7 |
| Trimethoprim/Sulfamethoxazole | ≤0.5 | >2 | ≤0.5->2 | 64.7 | 35.3 |
| Quinupristin/Dalfopristin | ≤0.25 | 0.5 | ≤0.25->8 | 99.1 | 0.3 |
| Teicoplanin | ≤2 | 8 | ≤0.12->16 | 96.0 | 1.0 |
| Vancomycin | 1 | 2 | ≤0.12-4 | 100.0 | 0.0 |
| Linezolid | 1 | 1 | ≤0.06-2 | 100.0 | - |
| *Enterococcus spp. (2,921)*[c] | | | | | |
| Tigecycline | ≤0.12 | 0.25 | ≤0.12-4 | - | - |
| Tetracycline | >8 | >8 | ≤0.25->8 | 38.3 | 61.2 |
| Ampicillin | 2 | >16 | ≤0.12->16 | 78.5 | 21.5 |
| Gentamicin | <500 | >1000 | <500->1000 | 67.7 | 32.3 |
| Streptomycin | ≤1000 | >2000 | ≤1000->2000 | 62.3 | 37.7 |
| Levofloxacin | 2 | >4 | ≤0.03->4 | 50.9 | 47.4 |
| Quinupristin/Dalfopristin | >2 | 8 | ≤0.25->8 | 21.9 | 70.5 |
| Teicoplanin | ≤2 | 4 | ≤2->16 | 90.5 | 8.1 |
| Vancomycin | 1 | >16 | ≤0.12->16 | 87.8 | 11.1 |
| Linezolid | 2 | 2 | ≤0.06->16 | 99.7 | 0.2 |

| Organism (no. tested/antimicrobial agent | MIC (mg/L) 50% | 90% | Range | % susceptible[a] | % resistant[a] |
|---|---|---|---|---|---|
| *ß-haemolytic streptococci (639)*[d] | | | | | |
| Tigecycline | ≤0.12 | ≤0.12 | ≤0.12-0.5 | - | - |
| Tetracycline | >8 | >8 | ≤0.25->8 | 27.6 | 54.7 |
| Penicillin | ≤0.016 | 0.06 | ≤0.016-0.12 | 100.0 | - |
| Erythromycin | ≤0.06 | 2 | ≤0.06->8 | 82.0 | 17.7 |
| Clindamycin | ≤0.06 | ≤0.06 | ≤0.06->8 | 93.9 | 5.8 |
| Levofloxacin | 0.5 | 1 | ≤0.03->4 | 98.7 | 0.9 |
| Trimethoprim/Sulfamethoxazole | ≤0.5 | ≤0.5 | ≤0.5->2 | - | - |
| Teicoplanin | ≤2 | ≤2 | ≤2 | - | - |
| Vancomycin | 0.5 | 0.5 | ≤0.12-1 | 100.0 | - |
| Linezolid | 1 | 1 | ≤0.06-2 | 100.0 | - |
| *Streptococcus pneumoniae (562)* | | | | | |
| Tigecycline | ≤0.12 | ≤0.12 | ≤0.12-1 | - | - |
| Tetracycline | ≤4 | 4 | ≤0.25->8 | 45.4 | 9.8 |
| Oxacillin | ≤0.016 | 2 | ≤0.016-8 | 79.2 | 10.3 |
| Clindamycin | ≤0.25 | 1 | ≤0.25-8 | 98.0 | 0.4 |
| Levofloxacin | ≤0.06 | 8 | ≤0.06->8 | 82.9 | 16.9 |
| Trimethoprim/Sulfamethoxazole | ≤0.06 | ≤0.06 | ≤0.06->8 | 93.8 | 5.9 |
| Quinupristin/Dalfopristin | 1 | 1 | 0.06->4 | 99.6 | 0.4 |
| Vancomycin | 0.25 | 0.5 | ≤0.12-1 | 100.0 | - |
| Linezolid | 1 | 1 | ≤0.06-2 | 100.0 | - |
| *viridans group streptococci (371)* | | | | | |
| Tigecycline | ≤0.12 | ≤0.12 | ≤0.12-1 | - | - |
| Tetracycline | ≤4 | >8 | ≤0.25->8 | 33.5 | 31.6 |
| Penicillin | 0.06 | 2 | ≤0.016->32 | 71.7 | 6.5 |
| Ceftriaxone | ≤0.25 | 1 | ≤0.25-16 | 90.8 | 5.9 |
| Erythromycin | ≤0.06 | >8 | ≤0.06->8 | 59.6 | 36.4 |
| Clindamycin | ≤0.06 | 0.5 | ≤0.06->8 | 88.4 | 9.7 |
| Levofloxacin | 1 | 2 | ≤0.03->4 | 97.3 | 2.4 |
| Vancomycin | 0.5 | 1 | ≤0.12-1 | 100.0 | - |
| Linezolid | 1 | 1 | ≤0.06-2 | 100.0 | - |

a. Criteria as published by the CLSI/NCCLS [2005].
b. - = no breakpoints have been established by the CLSI/NCCLS [2005].
c. Includes: *Enterococcus* spp. (79 strains), *E. faecalis* (2,079 strains), *E. casseliflavus* (17 strains), *E. avium* (19 strains), *E. durans* (13 strains), *E. raffinosus* (two strains), Streptococcus group D (five strains), *E. gallinarum* (34 strains), *E. faecium* (666 strains), *Enterococcus* group D (one strain) and *E. hirae* (six strains).
d. Includes: ß-haemolytic streptococci (six strains), *Streptococcus dysgalactiae* (three strains), *S. equi* (one strain), *S. equisimilis* (one strain), *Streptococcus* group A (190 strains), group B (314 strains), group C (25 strains) group F (seven strains) and group G (82 strains).

**Table 3.** Antimicrobial activity of tigecycline against Gram-negative bacteria isolated from bloodstream infection.

| Organism (no. tested/antimicrobial agent | MIC (mg/L) 50% | 90% | Range | % susceptible[a] | % resistant[a] |
|---|---|---|---|---|---|
| *Escherichia coli (3,022)* | | | | | |
| Tigecycline | 0.25 | 0.25 | 0.03-4 | -[b] | - |
| Tetracycline | ≤2 | >8 | ≤0.25->8 | 64.7 | 34.8 |
| Ceftriaxone | ≤0.25 | ≤0.25 | ≤0.008->32 | 96.2 | 3.1 |
| Ceftazidime | ≤1 | ≤1 | ≤1->16 | 96.9 | 1.9 |
| Cefepime | ≤0.12 | ≤0.12 | ≤0.12->16 | 97.3 | 2.0 |
| Piperacillin/Tazobactam | 2 | 4 | ≤0.12->256 | 96.4 | 1.9 |
| Imipenem | ≤0.5 | ≤0.5 | ≤0.5-8 | 99.9 | 0.0 |
| Ciprofloxacin | ≤0.03 | >4 | ≤0.03->4 | 82.8 | 17.2 |
| Gentamicin | ≤2 | ≤2 | ≤2->8 | 92.2 | 7.2 |
| Amikacin | 2 | 4 | ≤0.25->32 | 99.5 | 0.1 |
| *Klebsiella spp. (1,218)* | | | | | |
| Tigecycline | 0.5 | 1 | 0.06-8 | - | - |
| Tetracycline | ≤2 | >8 | ≤0.25->8 | 83.0 | 13.8 |
| Ceftriaxone | ≤0.25 | 32 | ≤0.25->32 | 86.9 | 8.8 |
| Ceftazidime | ≤1 | 16 | ≤1->16 | 88.3 | 9.4 |
| Cefepime | ≤0.12 | 4 | ≤0.12->16 | 93.2 | 5.5 |
| Piperacillin/Tazobactam | 2 | 32 | 0.25->256 | 89.2 | 9.2 |
| Imipenem | ≤0.5 | ≤0.5 | ≤0.5->8 | 99.6 | 0.3 |
| Ciprofloxacin | ≤0.03 | 2 | ≤0.03->4 | 89.1 | 9.3 |
| Gentamicin | ≤2 | >8 | ≤2->8 | 87.8 | 10.8 |
| Amikacin | 1 | 8 | ≤0.25->32 | 95.0 | 2.4 |
| *Enterobacter spp. (661)* | | | | | |
| Tigecycline | 0.5 | 2 | 0.06-8 | - | - |
| Tetracycline | ≤2 | >8 | 0.5->8 | 81.8 | 13.3 |
| Ceftriaxone | ≤0.25 | >32 | ≤0.25->32 | 78.1 | 14.7 |
| Ceftazidime | ≤1 | >16 | ≤1->16 | 76.6 | 20.0 |
| Cefepime | ≤0.12 | 4 | ≤0.12->16 | 94.9 | 3.8 |
| Piperacillin/Tazobactam | 2 | 64 | 0.25->256 | 81.4 | 9.7 |
| Imipenem | ≤0.5 | 1 | ≤0.5->8 | 99.7 | 0.2 |
| Ciprofloxacin | ≤0.03 | >4 | ≤0.03->4 | 85.5 | 11.8 |
| Gentamicin | ≤2 | >8 | ≤2->8 | 88.6 | 10.0 |
| Amikacin | 2 | 4 | 0.5->32 | 95.5 | 2.1 |
| *Pseudomonas aeruginosa (920)* | | | | | |
| Tigecycline | 8 | 16 | 0.12->32 | - | - |
| Tetracycline | >8 | >8 | 1->8 | 1.8 | 85.0 |
| Ceftazidime | 4 | >16 | ≤1->16 | 75.3 | 19.5 |
| Cefepime | 4 | >16 | ≤0.12->16 | 76.2 | 12.3 |
| Piperacillin/Tazobactam | 8 | >64 | ≤0.5->256 | 81.2 | 18.8 |
| Imipenem | 1 | >8 | ≤0.12->8 | 81.0 | 11.7 |
| Meropenem | 0.5 | >8 | ≤0.06->16 | 83.5 | 12.0 |
| Ciprofloxacin | 0.25 | >4 | ≤0.03->4 | 69.2 | 27.4 |
| Amikacin | 4 | 32 | ≤0.25->32 | 87.6 | 9.6 |
| Polymyxin B | ≤1 | ≤1 | ≤1->8 | 99.8 | 0.2 |

a. Criteria as published by the CLSI/NCCLS [2005].
b. - = no breakpoints have been established by the CLSI/NCCLS [2005].

**Table 4.** Antimicrobial activity of tigecycline against tetracycline-susceptible and –resistant strains

| Organism (no. tested) | Percentage of isolates inhibited at tigecycline MIC of (mg/L): ≤0.12 | 0.25 | 0.5 | 1 | 2 | 4 |
|---|---|---|---|---|---|---|
| *S. aureus* | | | | | | |
| Tetracycline-susceptible (7,111) | 55 | 88 | >99 | 100 | - | - |
| Tetracycline-resistant (727) | 41 | 82 | 98 | >99 | 100 | - |
| *Enterococci* | | | | | | |
| Tetracycline-susceptible (1,131) | 66 | 94 | >99 | >99 | 100 | - |
| Tetracycline-resistant (1,784) | 59 | 91 | >99 | >99 | >99 | 100 |
| *S. pneumoniae* | | | | | | |
| Tetracycline-susceptible (507) | 94 | 97 | 98 | 100 | - | - |
| Tetracycline-resistant (55) | 93 | 95 | 98 | 100 | - | - |
| *E. coli* | | | | | | |
| Tetracycline-susceptible (1,970) | 53 | 94 | >99 | 100 | - | - |
| Tetracycline-resistant (1,050) | 36 | 84 | 98 | >99 | 100 | - |

## CONCLUSIONS

- Tigecycline was highly active against the most frequently isolated pathogens from bloodstream infections, including some of the difficult to treat non-fermentative Gram-negative bacillary infections.

- Tigecycline may play an important role in the empiric treatment of clinically significant bacteremia in hospitalized patients.

- Continued surveillance through longitudinal programs remains necessary to monitor the in vitro activity of this important novel compound after its introduction in the clinical practice.