| Antimicrobial Agent | Disk Content | Interpretive Categories and Zone Diameter BPs (nearest whole mm) | | | Interpretive Categories and MIC BPs (µg/mL) | | | M100 Ed where BPs last listed/Comments | Rationale |
|---|---|---|---|---|---|---|---|---|---|
| | | S | I | R | S | I | R | | |
| ***Enterobacteriaceae*** | | | | | | | | | |
| Nalidixic acid | 30 µg | ≥ 19 | 14–18 | ≤ 13 | ≤ 16 | – | ≥ 32 | M100-S26*<br>Deleted for *Salmonella* spp. only | Nalidixic acid does not perform reliably in predicting susceptibility to fluoroquinolones that might be used for treatment of *Salmonella* infections. It has been shown to produce both false resistant and false susceptible results.[1,2] |
| Cephalothin (surrogate test for uncomplicated UTI) | 30 µg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | M100-S26 | Cefazolin has been shown to be a more reliable surrogate than cephalothin for predicting results for oral cephalosporins that might be used for treatment of uncomplicated UTIs. |
| Ticarcillin | 75 µg | ≥ 20 | 15–19 | ≤ 14 | ≤ 16 | 32–64 | ≥ 128 | M100-S20 | When cefazolin MIC breakpoints were revised, these disk diffusion BPs were no longer valid. (Disk diffusion BPs to correlate with the new cefazolin MIC BPs have not yet been established.) |
| Cefazolin | 30 µg | ≥ 18 | 15–17 | ≤ 14 | – | – | – | | |
| ***Pseudomonas aeruginosa*** | | | | | | | | | |
| Cefoperazone | 75 µg | ≥ 21 | 16–20 | ≤ 15 | ≤ 16 | 32 | ≥ 64 | M100-S21 | These agents are no longer available or have limited indications for *P. aeruginosa.* |
| Cefotaxime | 30 µg | ≥ 23 | 15–22 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |
| Ceftriaxone | 30 µg | ≥ 21 | 14–20 | ≤ 13 | ≤ 8 | 16–32 | ≥ 64 | | |
| Ceftizoxime | 30 µg | ≥ 20 | 15–19 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |
| Moxalactam | 30 µg | ≥ 23 | 15–22 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |
| ***Acinetobacter* spp.** | | | | | | | | | |
| Mecillinam | 10 µg | ≥ 15 | 12–14 | ≤ 11 | ≤ 8 | 16 | ≥ 32 | M100-S26 | |
| Ticarcillin | 75 µg | ≥ 20 | 15–19 | ≤ 14 | ≤ 16 | 32–64 | ≥ 128 | | |
| ***Staphylococcus* spp.** | | | | | | | | | |
| Oxacillin (*S. aureus*/ *S. lugdunensis*) | 1 µg | ≥13 | 11–12 | ≤10 | – | – | – | M100-S23 | Oxacillin disk diffusion performance is inferior to that of cefoxitin for detection of *mecA* mediated oxacillin resistance. |
| Amoxicillin-clavulanate | 20/10 µg | ≥ 20 | – | ≤ 19 | ≤ 4/2 | – | ≥ 8/4 | M100-S23 | There are limited data available to demonstrate the predictive value of testing all these β-lactam agents against staphylococci. Consequently, susceptibility results for antistaphylococcal β-lactams other than penicillin and oxacillin (cefoxitin) are best determined by deducing results from testing penicillin and oxacillin (cefoxitin). An exception is for ceftaroline which must be tested if ceftaroline results are requested. |
| Ampicillin-sulbactam | 10/10 µg | ≥ 15 | 12–14 | ≤ 11 | ≤ 8/4 | 16/8 | ≥ 32/16 | | |
| Piperacillin-tazobactam | 100/10 µg | ≥ 18 | – | ≤ 17 | ≤ 8/4 | – | ≥ 16/4 | | |
| Ticarcillin-clavulanate | 75/10 µg | ≥ 23 | – | ≤ 22 | ≤ 8/2 | – | ≥ 16/2 | | |
| Cefamandole | 30 µg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefazolin | 30 µg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefepime | 30 µg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefmetazole | 30 µg | ≥ 16 | 13–15 | ≤ 12 | ≤ 16 | 32 | ≥ 64 | | |
| Cefonicid | 30 µg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefoperazone | 75 µg | ≥ 21 | 16–20 | ≤ 15 | ≤ 16 | 32 | ≥ 64 | | |
| Cefotaxime | 30 µg | ≥ 23 | 15–22 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Cefotetan | 30 μg | ≥ 16 | 13–15 | ≤ 12 | ≤ 16 | 32 | ≥ 64 | | |
| Ceftazidime | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Ceftizoxime | 30 μg | ≥ 20 | 15–19 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |
| Ceftriaxone | 30 μg | ≥ 21 | 14–20 | ≤ 13 | ≤ 8 | 16–32 | ≥ 64 | | |
| Cefuroxime (parenteral) | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cephalothin | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Moxalactam | 30 μg | ≥ 23 | 15–22 | ≤ 14 | ≤ 8 | 16–32 | ≥ 64 | | |
| Cefaclor | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefdinir | 5 μg | ≥ 20 | 17–19 | ≤ 16 | ≤ 1 | 2 | ≥ 4 | | |
| Cefpodoxime | 10 μg | ≥ 21 | 18–20 | ≤ 17 | ≤ 2 | 4 | ≥ 8 | | |
| Cefprozil | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Cefuroxime (oral) | 30 μg | ≥ 23 | 15–22 | ≤ 14 | ≤ 4 | 8–16 | ≥ 32 | | |
| Loracarbef | 30 μg | ≥ 18 | 15–17 | ≤ 14 | ≤ 8 | 16 | ≥ 32 | | |
| Doripenem | 10 μg | ≥ 30 | – | – | ≤ 0.5 | – | – | | |
| Ertapenem | 10 μg | ≥ 19 | 16–18 | ≤ 15 | ≤ 2 | 4 | ≥ 8 | | |
| Imipenem | 10 μg | ≥ 16 | 14–15 | ≤ 13 | ≤ 4 | 8 | ≥ 16 | | |
| Meropenem | 10 μg | ≥ 16 | 14–15 | ≤ 13 | ≤ 4 | 8 | ≥ 16 | | |

Abbreviations: BP, breakpoints; Ed, edition; I, intermediate; MIC, minimal inhibitory concentration; R, resistant; S, susceptible; UTI, urinary tract infection

**References:**


1. Deak E, Skov R, Hindler JA, Humphries RM. 2015. Evaluation of Surrogate Disk Tests for Detection of Ciprofloxacin and Levofloxacin Resistance in Clinical Isolates of Salmonella enterica. J Clin Microbiol 53:3405-3410.

2. Skov R, Matuschek E, Sjölund-Karlsson M, Åhman J, Petersen A, Stegger M, Torpdahl M, Kahlmeter G. 2015. Development of a Pefloxacin Disk Diffusion Method for Detection of Fluoroquinolone-Resistant Salmonella enterica. J Clin Microbiol 53:3411-3417.