

# Laboratory diagnosis of bloodstream infections caused by extended-spectrum $\beta$ -lactamase-producing *E. coli* and *Klebsiella* species

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Due to a technical problem, Figure 1 was reproduced incorrectly when this item was published originally (*Br J Biomed Sci* 2005; 63 1–4). Figure 1 from this paper is reproduced here in its correct form. We apologise to the authors for any inconvenience caused.

## ABSTRACT

Extended-spectrum  $\beta$ -lactamase (ESBL)-producing organisms are resistant to the third-generation cephalosporins commonly used as empirical therapy for a wide range of serious infections. It is therefore important for laboratories to offer reliable ESBL detection methods. This study compares two combination disc methods (Oxoid and Mast Diagnostics) containing cepodoxime with and without clavulanate with Vitek 2 for routine detection of ESBLs in *Escherichia coli* and *Klebsiella* spp. isolated from blood cultures. From December 2003 to April 2005, a total of 58 potential ESBL-producing isolates (resistant to cefotaxime and/or ceftazidime) by BSAC disc susceptibility were tested by the combination discs and Vitek 2. The Advanced Expert System, a feature of Vitek 2, reports possible mechanisms of resistance, based on interpretive reading of MICs. This study detected 7.4% more ESBL-producing isolates

by Vitek 2 than by Oxoid disc testing (95% CI: 0.15–14.7%;  $P < 0.2$ ) and 31.6% more ESBL-producing isolates were detected by Vitek 2 than by Mast disc testing (95% CI: 16.2–46.96%;  $P < 0.001$ ). Batch-to-batch variation was evident in disc performance for both disc types. Thus, use of appropriate controls is recommended when testing by the combination disc methods. Although no phenotypic test is 100% sensitive and specific, the Vitek 2 was a reliable system for ESBL detection; however, it is expensive and interpretation of results can be confusing to inexperienced users. Further studies to compare Vitek 2 with cefotaxime and ceftazidime combination discs may reveal disc methodology for ESBL detection to be a more reliable alternative than using cepodoxime combination discs alone.

KEY WORDS: Antibiotics. Lactams. Septicemia.

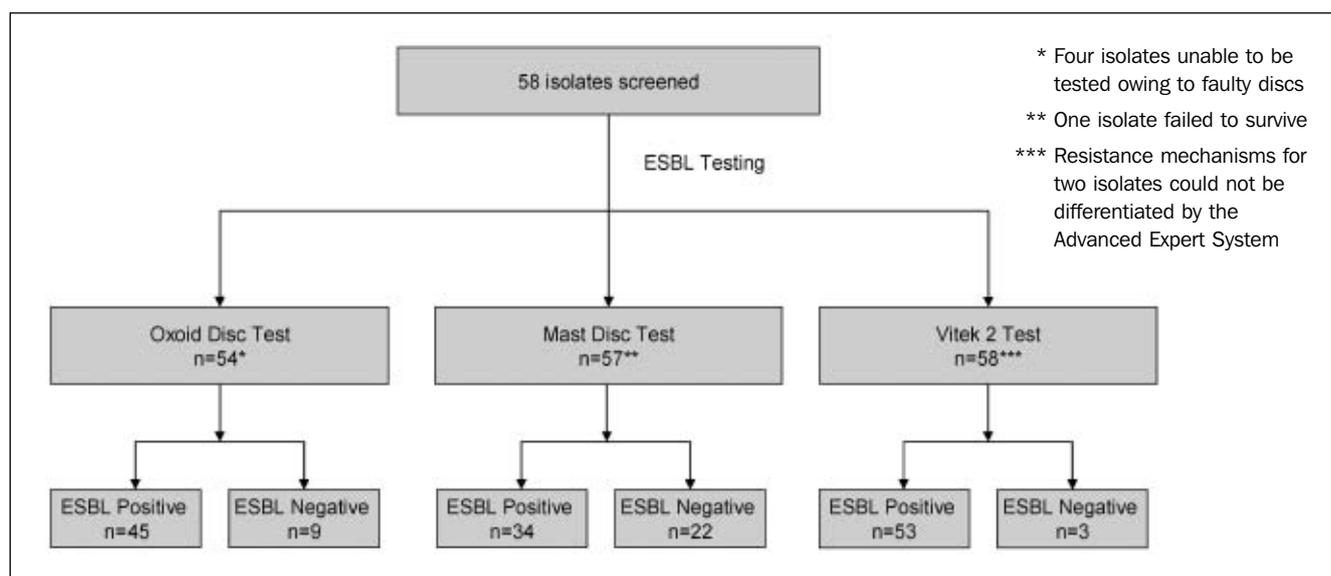


Fig. 1. Comparison of three test methods for ESBL detection.