

**Detection of ESBL producing E. coli and Klebsiella pneumoniae/oxytoca
in all sources for Infection Control**

Organisms that produce ESBLs (extended spectrum beta-lactamases) are an Infection Control concern because they are carried on plasmids and can be transferred from patient to patient or from patient to health care worker. Confirmatory testing is performed to notify Infection Control of patients positive for ESBLs so proper precautions are taken to prevent the spread of these organisms.

METHOD

Kirby Bauer:

Requests for ESBL confirmation can be performed using Kirby-Bauer.

Test the isolate against the following four antibiotics:

Ceftazidime (30 ug/ml) and ceftazidime with clavulanic acid (30/10 ug/ml)
Cefotaxime (30 ug/ml) and cefotaxime with clavulanic acid (30/10 ug/ml)

A ≥ 5 mm increase in a zone of inhibition for either antibiotic tested when compared to the antibiotic combined with clavulanic acid is confirmatory for ESBL production (Positive).

REPORTING

1. Add media \$ESBL. This will be used to document zone sizes.
2. **ESBL Positive isolates:** Add drug 'xESBL' result as 'POS'. Add isolate comment **&ESBP** if it is not automatically generated upon Final.
3. **ESBL Negative isolates:** Add drug 'xESBL' result as 'NEG'. Add isolate comment **&ESBN** if it is not automatically generated upon Final.

QUALITY CONTROL

QC is performed weekly with the routine susceptibility quality control.

E. coli ATCC 25922:

≤ 2 mm increase in the zone of inhibition between the antibiotic and antibiotic/clavulanic combination.

Kleb. pneumoniae ATCC 700603:

≥ 5 mm increase in the zone of inhibition with the ceftazidime combination.

or

= 3mm increase in the zone of inhibition with the cefotaxime combination.