

CEPHALEXIN 100 DISC IN CDS

Adelaide 2013

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Use of Cephalexin in UTI

High potency CL 100 μ g disc

Calibrated for:

1. Enterobacteriaceae in Urine
2. *Staphylococcus saprophyticus* in urine

The susceptible MIC breakpoint is 16 mg/L

Urine concentrations of CL ranged from 400-1600 μ g/mL.

(Cephalexin: Absorption and Excretion as related to Renal Function and Hemodialysis – Reisberg et al. 1970)

Use of CL 100 in the Detection of resistance mechanism

1. Enterobacteriaceae:

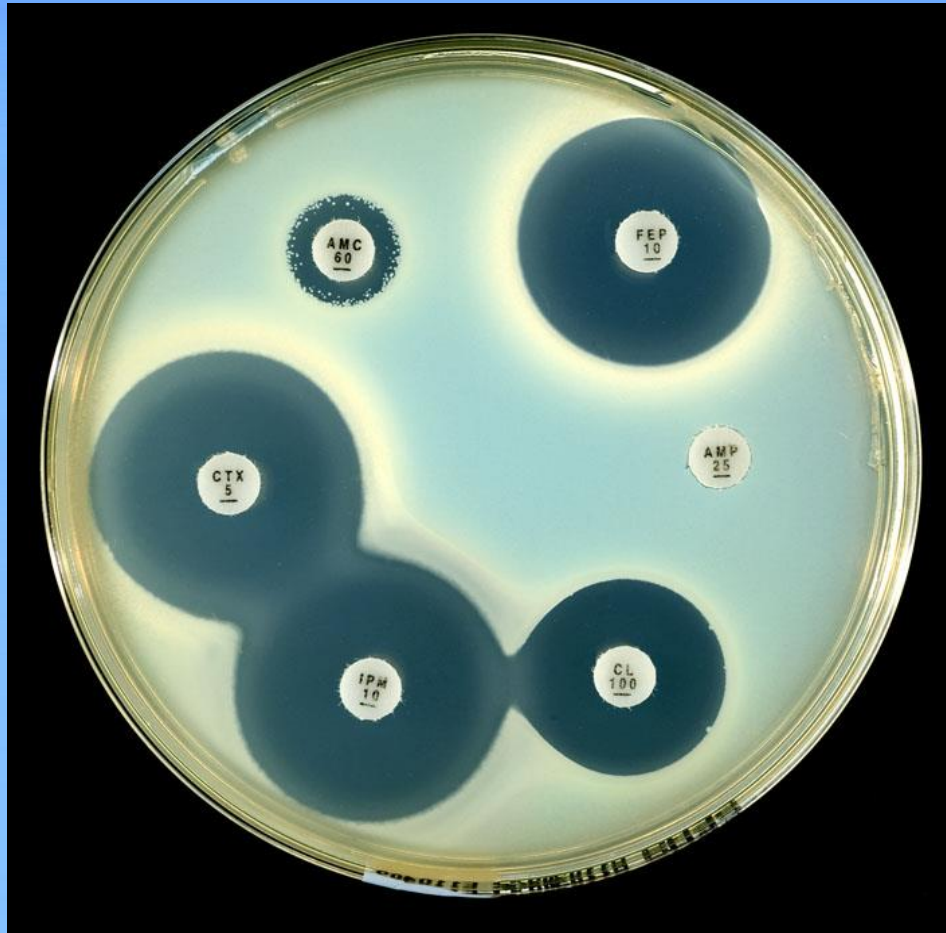
- Recognize Inhibitor Resistant TEM β -lactamase - **IRT**
- Detect AmpC

2. *Staphylococcus saprophyticus*:

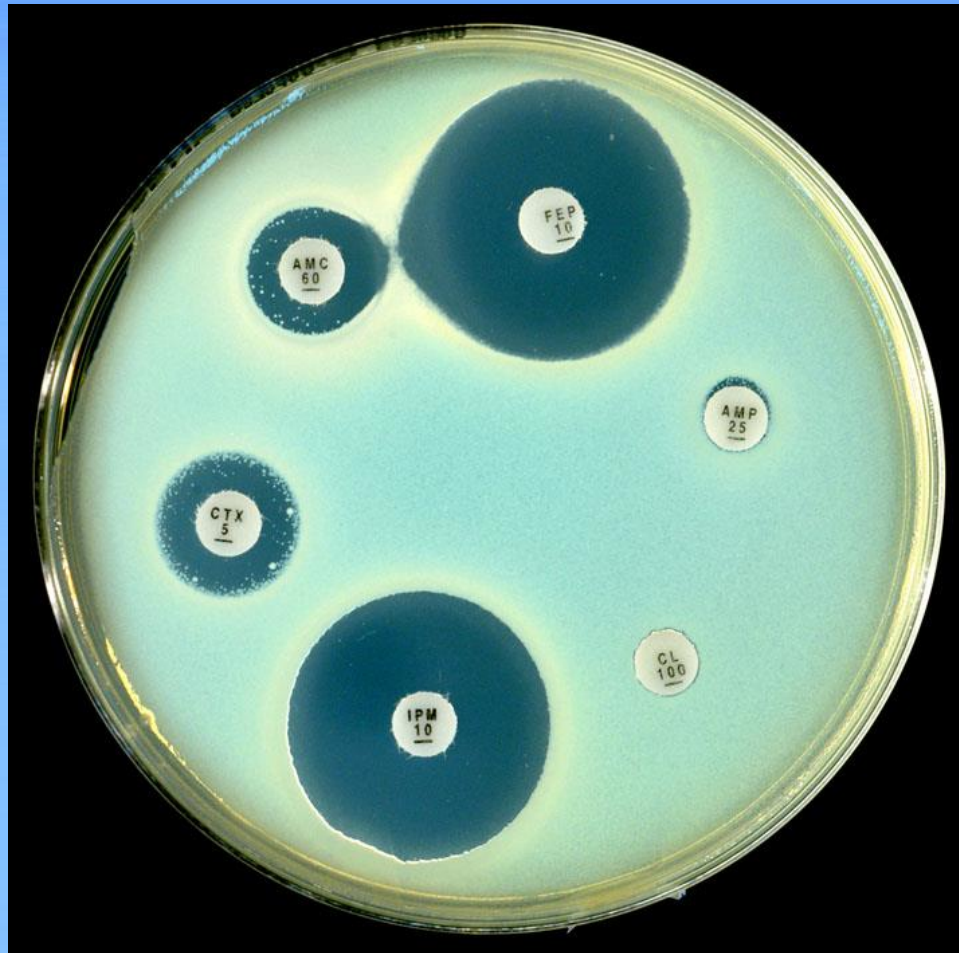
Recognize *mecA* positive *S. saprophyticus*



E. coli ACM 5186 (use in QC) producing **TEM-1 β -lactamases**
R/ampicillin (AMP 25) S/ cephalexin (CL 100)



An *E. coli* producing an **Inhibitor-Resistant TEM β -lactamases (IRTs)**
R/ ampicillin (AMP 25) and Augmentin (AMC 60),
S/cephalexin (CL 100)



E. coli with a TEM-1 and a **plasmid mediated AmpC**
R/ ampicillin (AMP 25), cephalexin (CL 100), Augmentin (AMC 60),
cefotaxime (CTX 5)
S/ cefepime (FEP 10) and imipenem (IPM 10).

S. saprophyticus versus cephalexin CL 100 (*mecA* gene)

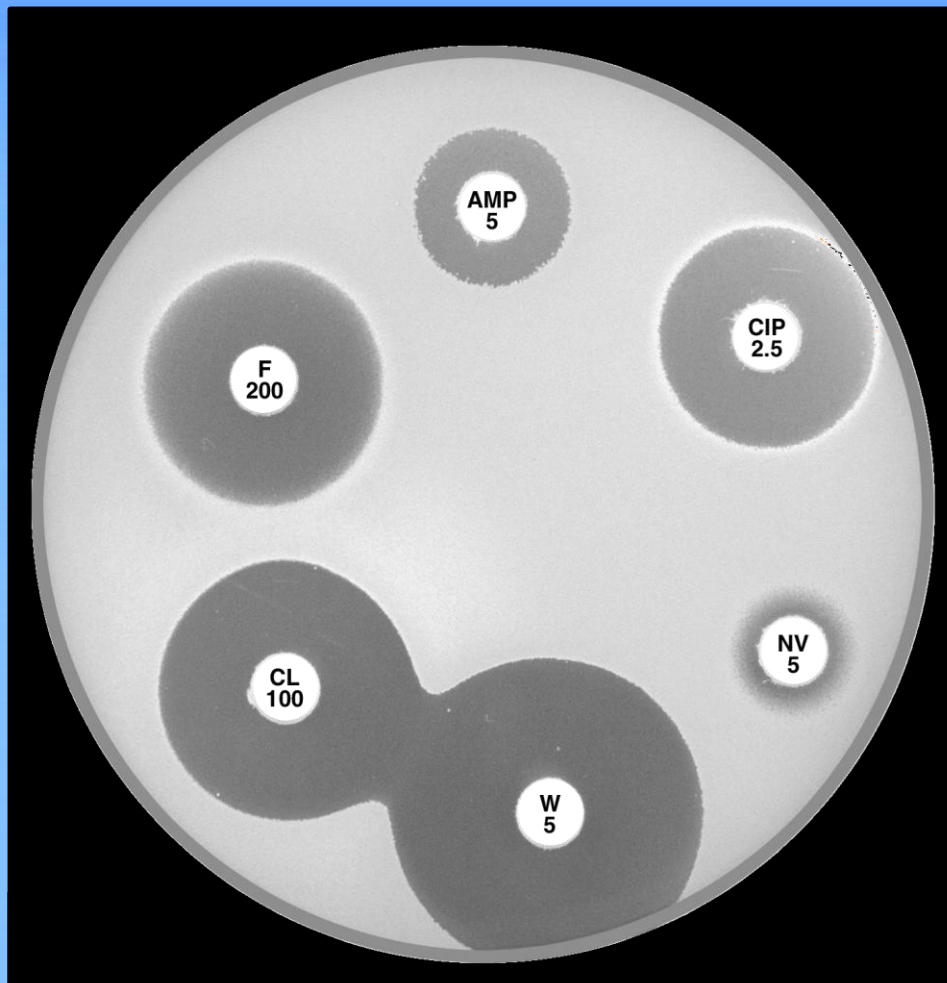
Urine isolates of CNS resistant to novobiocin

=> presumptively identified as *S. saprophyticus*

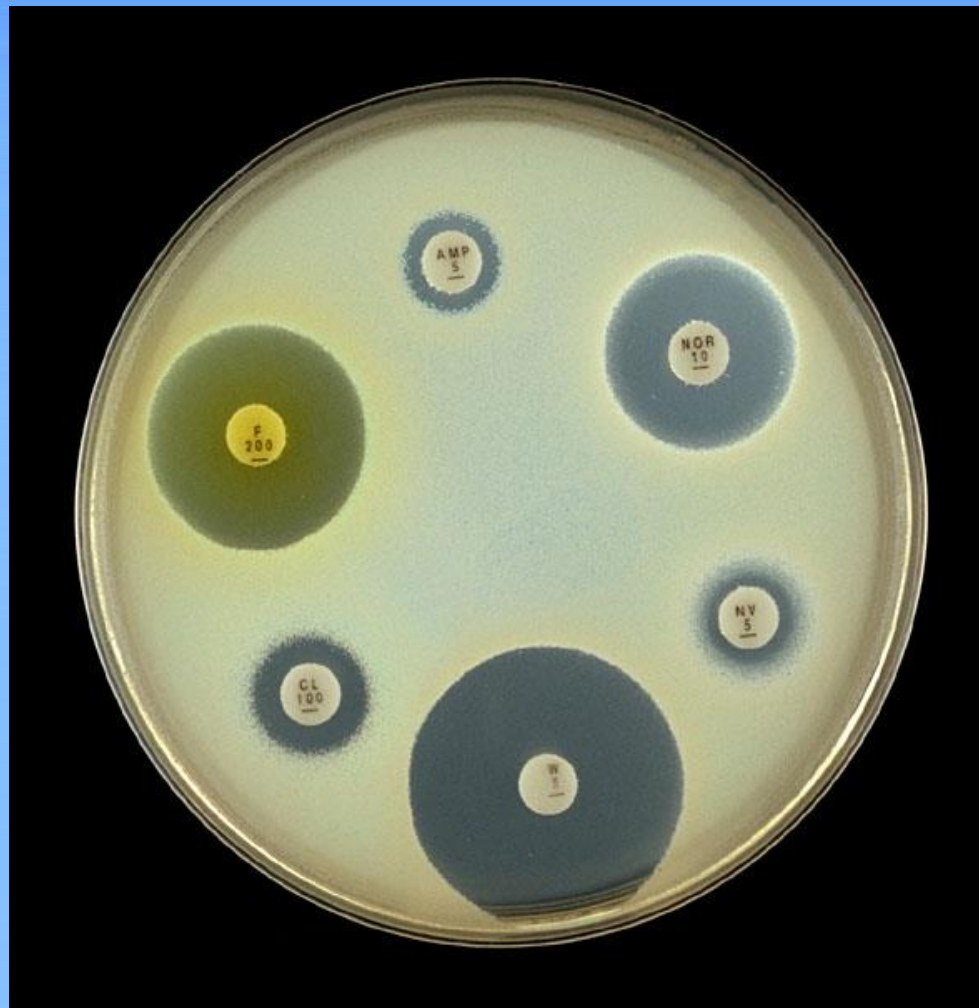
Intrinsic resistance => false resistance when

P 0.5 u and Ox 1 are used

- ❖ Ampicillin 5 µg (AMP 5) to detect inducible penicillinase
- ❖ Cephalexin 100 µg (CL 100) to detect *mecA* gene positive *S. saprophyticus*



***S. saprophyticus mecA* gene negative** with an inducible penicillinase
Resistant to ampicillin (AMP 5), Susceptible to cephalexin (CL 100)
Report: R/ ampicillin, penicillin, amoxicillin
S/ cephalexin, Augmentin, flucloxacillin



Staphylococcus saprophyticus (mecA gene-positive)

R/ ampicillin (AMP 5) and cephalexin (CL 100)

Report: R/ ampicillin, penicillin, amoxicillin

R/ cephalexin, Augmentin, flucloxacillin

Take home message

- Test and report cephalixin susceptibility in UTI only.
- Use CL 100 in the Detection of resistance mechanism – do not report cephalixin susceptibility.