Staphylococcus saprophyticus

Calibration of zone diameter breakpoints to MIC values and resistance mechanisms

Version 1.6
January 2020
**Staphylococcus saprophyticus**

MIC and zone diameter correlates

- The following histograms present inhibition zone diameter distributions from EUCAST antimicrobial susceptibility testing. In most, the different colours of the bars indicate different MIC values. In some, the colours of the bars indicate a resistance gene or a resistance mechanism.

- The distributions include data for wild-type isolates and for isolates with acquired resistance mechanisms. A large number of isolates with MIC values close to the edge of the wild-type distribution and/or close to EUCAST clinical breakpoints were intentionally included. These distributions can not be used to infer resistance rates or the performance of the tests with routine isolates.

- For some agents, isolates were tested on more than one occasion, including parallel tests with disks and media from several manufacturers. When this is the case, data are presented as both the “number of isolates tested” and the “total number of MIC-zone diameter correlates”, including replicate tests and parallel tests with disks and media from different sources.
Staphylococcus saprophyticus
Materials and methods

- Antimicrobial susceptibility testing was performed on clinical isolates of *Staphylococcus saprophyticus*. Disk diffusion was performed according to EUCAST methodology and MIC determination was performed with gradient tests. *MecA* status was analysed with PCR.

- The distributions in this presentation are the result of a collaboration between EUCAST, Karolinska University Hospital, Solna, Sweden and Canterbury Health Labs, Christchurch, New Zealand.

- This presentation is based on EUCAST Clinical Breakpoint Tables v. 10.0.
Changes from previous version (1.5)

<table>
<thead>
<tr>
<th>Changes</th>
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<td>• No changes. Breakpoints checked against latest version of EUCAST Clinical Breakpoint Tables.</td>
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Explanation of graphs:

- These graphs show zone diameter distributions with MIC values or resistance mechanisms as coloured bars. Colours are related to current EUCAST MIC breakpoints.

**Agent X**

- Zone diameter breakpoint
- MIC (mg/L)
  - ≥8: Resistant
  - 4, 2, 1, 0.5, 0.25: Susceptible, standard dosing regimen

**Agent Y**

- MIC (mg/L)
  - ≥64: Resistant
  - 32, 16, 8, 4, 2, 1, 0.5, ≤0.25: Susceptible, increased exposure
Cefoxitin 30 μg vs. MIC
S. saprophyticus, 127 isolates

(3 data sources)

Breakpoints
MIC (screen)  S\leq 8, R>8 mg/L
Zone diameter (screen)  S\geq 22, R<22 mm
Cefoxitin 30 μg vs. mecA-status
*S. saprophyticus*, 127 isolates

(3 data sources)

- **Breakpoints**
  - Zone diameter (screen) $S \geq 22$, $R < 22$ mm

### No of observations

- **mecA status**
  - Red: Positive
  - Black: Negative

### Inhibition zone diameter (mm)

- 6
- 8
- 10
- 12
- 14
- 16
- 18
- 20
- 22
- 24
- 26
- 28
- 30
- 32
- 34
- 36
- 38
- 40

- **No of observations**
  - 0
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30
Ampicillin 2 μg vs. MIC
S. saprophyticus, 127 isolates

(3 data sources)

No of observations

Inhibition zone diameter (mm)

MIC (mg/L)

- 32
- 16
- 8
- 4
- 2
- 1
- 0.5
- 0.25
- 0.125
- 0.06

Colours are based on a tentative MIC ECOFF.

**Breakpoints**

MIC: Not defined
Zone diameter: S≥18, R<18 mm
Ampicillin 2 μg vs. mecA-status
S. saprophyticus, 127 isolates
(3 data sources)

Breakpoints
Zone diameter S≥18, R<18 mm