**ABSTRACT**

Background. Doxycycline (DOX) is Pfizer’s first once-a-day broad spectrum antibiotic and is commonly used in in vitro diagnostic product for clinical susceptibility testing of non-fastidious organisms. Sensitivity testing of clinical isolates has been performed using the Sensititre 18-24 hour susceptibility plate. Doxycycline was Pfizer’s first once-a-day broad spectrum antibiotic and is commonly used in in vitro diagnostic product for clinical susceptibility testing of non-fastidious organisms. Sensitivity testing of clinical isolates has been performed using the Sensititre 18-24 hour susceptibility plate.

**MATERIALS & METHODS**

**Materials and Methods.** DOX (0.03 – 16 µg/ml) was tested on the Sensititre broth microdilution system (TREK Diagnostic Systems, Cleveland, OH) using both automated and manual reading methodologies.

**Organisms Tested.** The organisms included a panel of Gram-positive and Gram-negative clinical and challenge isolates given reliable results using either the automated/manual read susceptibility plate compared to the CLSI reference microdilution results.

**Quality Control.** Each dilution was tested using a line for DOX (1.0 µg/ml). The plate was set-up according to the manufacturer’s instructions. The CLSI reference microdilution plates were prepared and tested according to the Clinical Laboratory Standards Institute (CLSI M7-A16).

**Susceptibility Testing Methods.** The CLSI reference microdilution plate was prepared according to the Clinical Laboratory Standards Institute (CLSI M7-A16).

**RESULTS**

**Comparisons for DOX MIC results on the Sensititre system to the CLSI M7 BMD:**

**Clinical and Challenge Isolates using the Manual Read Methodology**

**Clinical Isolates**

<table>
<thead>
<tr>
<th>Organism</th>
<th>MIC (µg/ml)</th>
<th>Category</th>
<th>Clinical MIC</th>
<th>Clinical Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. aureus</td>
<td>0.03-0.12</td>
<td>Sensitive</td>
<td>Sensitive</td>
<td>Sensitive</td>
</tr>
<tr>
<td>E. coli</td>
<td>&gt;16</td>
<td>Resistant</td>
<td>Resistant</td>
<td>Resistant</td>
</tr>
<tr>
<td>P. aeruginosa</td>
<td>&gt;16</td>
<td>Resistant</td>
<td>Resistant</td>
<td>Resistant</td>
</tr>
</tbody>
</table>

**Challenge Isolates**

<table>
<thead>
<tr>
<th>Organism</th>
<th>MIC (µg/ml)</th>
<th>Category</th>
<th>Challenge MIC</th>
<th>Challenge Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. aureus</td>
<td>0.03-0.12</td>
<td>Sensitive</td>
<td>Sensitive</td>
<td>Sensitive</td>
</tr>
<tr>
<td>E. coli</td>
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<td>&gt;16</td>
<td>Resistant</td>
<td>Resistant</td>
<td>Resistant</td>
</tr>
</tbody>
</table>

**Overall Essential and Categorical Agreements of Gram Positive Clinical and Challenge Isolates using the Manual Read Methodology**

**Between-site reproducibility %**

- **Manual Methodology:**
  - Between-site reproducibility %: 100%
  - Between-site reproducibility ratio: 1.00
- **Auto Read Methodology:**
  - Between-site reproducibility %: 99.5%
  - Between-site reproducibility ratio: 0.99

**Manual vs Auto Read Methodology**

- **Manual Methodology:**
  - Between-site reproducibility %: 100%
  - Between-site reproducibility ratio: 1.00
- **Auto Read Methodology:**
  - Between-site reproducibility %: 99.5%
  - Between-site reproducibility ratio: 0.99

**RESULTS**

**Between-site reproducibility %**

- **Manual Methodology:**
  - Between-site reproducibility %: 100%
  - Between-site reproducibility ratio: 1.00
- **Auto Read Methodology:**
  - Between-site reproducibility %: 99.5%
  - Between-site reproducibility ratio: 0.99

**CONCLUSION**

The Sensititre 18-24 hour susceptibility plate was compared to the CLSI M7 reference microdilution system using the manufacturer’s method for performance testing. There was excellent agreement to the CLSI M7 BMD standards and no major errors were observed.

**REFERENCES**