**Materials and Methods**

- Spectrum of activity studies for omadacycline were performed in 2003, 2007 and 2015 using the CLSI reference broth microdilution methods.\(^1\)
- Clinical isolates tested were <3 years old at the time of testing for >90% of the total isolates for each study.
- Known stock isolates were also tested in order to include a variety of resistance mechanisms.
- All Mueller Hinton broth lots were <12 hrs old at the time the panels were prepared and frozen at -70 degrees C.
- Test organisms included *Staphylococcus aureus, Enterococcus faecalis, Enterococcus faecium, Streptococcus agalactiae, Streptococcus pyogenes, Haemophilus influenzae, Moraxella catarrhalis, Escherichia coli* and *Klebsiella pneumoniae*.

**Background**

Omadacycline is the first aminomethylcycline to enter clinical development. OMC is being developed globally as an anti-infective and oral daily dosing therapy for ABSSSI and CARB. OMC was designed to overcome tetracycline resistance mechanisms and has been shown to have potent in vitro activity and in vivo efficacy against the key pathogens of ABSSSI and CARB, including isolates resistant to standards of care. The PK and oral formulations are bioequivalent and neither shown the dose-limiting nausea and vomiting exhibited by other tetracycline derivatives.

**Results and Conclusions**

- The activity of OMC has remained stable from 2003 through 2015. OMC had good activity against ABSSSI (Escherichia coli, Enterococcus fecalis, Staphylococcus aureus, b-Hemolytic Streptococci, *Streptococcus pneumoniae*, and *Moraxella catarrhalis*) with MIC\(_{50}\)s ranging from 0.03 to 0.25 mg/mL and MIC\(_{90}\)s from 0.06 to 0.5 mg/mL. *Haemophilus influenzae* had slightly higher MICs, which ranged from 0.12 to 0.25 mg/mL and MIC\(_{90}\)s from 0.12 to 0.5 mg/mL. *Escherichia coli* had MIC\(_{50}\)s ranging from 0.06 to 0.25 mg/mL and MIC\(_{90}\)s from 0.12 to 0.5 mg/mL. *Adephylus pneumoniae* MIC\(_{50}\)s were 2 mg/mL and MIC\(_{90}\)s were equal.

### References


### Table 1. Omadacycline MIC Distributions 2003 to 2015

<table>
<thead>
<tr>
<th>ORGANISM GROUP</th>
<th>2003 SURVEYS</th>
<th>2007 SURVEYS</th>
<th>2015 SURVEYS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIC Range</td>
<td>MIC(_{50})</td>
<td>MIC(_{90})</td>
</tr>
<tr>
<td>S. pneumoniae</td>
<td>0.03-0.25</td>
<td>0.12</td>
<td>0.25</td>
</tr>
<tr>
<td>M. catarrhalis</td>
<td>0.03-0.5</td>
<td>0.12</td>
<td>0.25</td>
</tr>
<tr>
<td>E. coli</td>
<td>0.06-0.5</td>
<td>0.12</td>
<td>0.25</td>
</tr>
<tr>
<td>K. pneumoniae</td>
<td>0.03-0.5</td>
<td>0.12</td>
<td>0.25</td>
</tr>
<tr>
<td>S. aureus</td>
<td>0.03-1</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>S. faecalis</td>
<td>0.06-4</td>
<td>0.25</td>
<td>2</td>
</tr>
<tr>
<td>S. pyogenes</td>
<td>0.06-2</td>
<td>0.12</td>
<td>0.25</td>
</tr>
</tbody>
</table>

**Table 2. Omadacycline vs Comparator MIC Data 2015**

<table>
<thead>
<tr>
<th>ORGANISM GROUP</th>
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<th>MIC(_{50})</th>
<th>MIC(_{90})</th>
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<td>0.25</td>
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**Conclusions**: The activity of OMC has remained stable from 2003 through 2015. OMC had good activity against ABSSSI (Escherichia coli, Enterococcus fecalis, Staphylococcus aureus, β-Hemolytic Streptococci, *Streptococcus pneumoniae* and *Moraxella catarrhalis*) with MIC\(_{50}\)s ranging from 0.03 to 0.25 mg/mL and MIC\(_{90}\)s from 0.06 to 0.5 mg/mL. *Haemophilus influenzae* had slightly higher MICs, which ranged from 0.12 to 0.25 mg/mL and MIC\(_{90}\)s from 0.12 to 0.5 mg/mL. *Escherichia coli* had MIC\(_{50}\)s ranging from 0.06 to 0.25 mg/mL and MIC\(_{90}\)s from 0.12 to 0.5 mg/mL. *Adephylus pneumoniae* MIC\(_{50}\)s were 2 mg/mL and MIC\(_{90}\)s were equal.