Research letters

Table 1. Summary MIC data for ME1036

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>MIC (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>min</td>
</tr>
<tr>
<td>β-Lactamase-negative <em>H. influenzae</em> (n=94)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>β-Lactamase-positive <em>H. influenzae</em> (n=25)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>β-Lactamase-positive <em>M. catarrhalis</em> (n=9)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>Methicillin-resistant <em>S. aureus</em> (n=28)</td>
<td>0.12</td>
</tr>
<tr>
<td>Methicillin-susceptible <em>S. aureus</em> (n=136)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>Penicillin-susceptible <em>S. pneumoniae</em> (n=762)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>Penicillin-intermediate <em>S. pneumoniae</em> (n=97)</td>
<td>≤0.008</td>
</tr>
<tr>
<td>Penicillin-resistant <em>S. pneumoniae</em> (n=148)</td>
<td>≤0.008</td>
</tr>
<tr>
<td><em>S. pyogenes</em> (n=38)</td>
<td>≤0.008</td>
</tr>
</tbody>
</table>

Acknowledgements

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Transparency declarations

I. M. has accepted grants, speaking invitations and conference invitations from most major pharmaceutical companies in recent years. D. B. is an employee of Cerexa, a wholly-owned subsidiary of Forest Laboratories Inc, and holds stock options in Forest Laboratories Inc. R. J.: none to declare.

References


10. Tygacil<sup>®</sup> package insert. http://www.fda.gov/cder/foi/label/2005/ 39-08713554912; E-mail: fepifano@unich.it

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Boropinic acid, a novel inhibitor of *Helicobacter pylori* stomach colonization

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Keywords: *H. pylori*, chemotherapy, prenyloxyacinnamic acid

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Sir,

Due to the increased incidence of *Helicobacter pylori* strains resistant to the antibiotics commonly used for *H. pylori* eradication, the search for alternative therapies based on the use of new compounds with antibacterial and/or preventive activity against *H. pylori* infection is of increasing interest.\(^1\) Boropinic acid is a prenyloxycinnamic acid isolated from the Australian shrub *Boronia pinnata* Sm. (Fam. Rutaceae) that was recently reported to inhibit *in vitro* the growth of *H. pylori* strain DSMZ 4867 (MIC=6.17 \(\mu\)M).\(^2\) Its structure is shown in Figure 1. The aim of the present study was to further investigate the effects of this compound on the *in vivo* growth of *H. pylori* SS1 strain, originally isolated from a patient with peptic ulcer disease, using the well-known murine model of infection of C57BL/6 mice.\(^3\)–\(^5\)

The experiments carried out in this study were approved in advance by the Central Animal Facility Committee of the Institute Pasteur, in conformity with the French Ministry of Agriculture Guidelines for Animal Care. Three groups of mice (\(n=5–7\) mice per group) were orogastrically inoculated with 100 \(\mu\)L of a suspension of *H. pylori* strain (10\(^8\) cfu/mL). Seven days later, two of these groups were orogastrically treated with 150 \(\mu\)L of boropinic acid (5 and 100 \(\mu\)M) everyday for 2 consecutive weeks.\(^4\) These two concentrations were chosen on the basis of results obtained in previously reported *in vitro* tests.\(^2\)

*In vivo* data, reported in Figure 2, revealed that colonization of the mice gastric mucosa was inhibited with the same efficiency at 5 and 100 \(\mu\)M (8.4- and 12.6-fold, respectively) as compared with non-treated mice. No bacteria were detected in the gastric mucosa of control mice inoculated with peptone trypsin broth alone. During experimentation, no toxic or side effects of boropinic acid were observed on mice, as well as by histopathological examination soon after the sacrifice of all animals. As a way of developing potential new drugs with antibacterial properties for use as alternative treatment in the eradication of *H. pylori* infection, data obtained in the present study showed that boropinic acid could be considered as a lead compound of a novel class of *H. pylori* inhibitory agents. It could be used in combination with existing antibiotic treatment. Currently, studies aiming to get further insights into the mechanism of action underlying the observed effects are in progress in our laboratories.

**Funding**

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**Transparency declarations**

None to declare.

**References**