**Broad Spectrum Antiviral Compounds**

**Overview:** Auburn University is seeking a licensee or development partner for a suite of patented antiviral compounds. These compounds have activity against several human viruses including Ebola, human cytomegalovirus, norovirus, and dengue fever, with the potential to inhibit other, untested viruses. The compounds can be used to prevent or treat viral outbreaks.

**Advantages:**
- **Broad spectrum** - Active against DNA and RNA viruses, including human cytomegalovirus, hepatitis B, norovirus, ebola, dengue, measles and more
- **Scalable** - Less expensive, more stable and scalable compared to biologicals
- **Reduced toxicity** - many compounds lack the toxicity seen in most neplanocin derivatives

**Description:** Antiviral treatments remain a significant need. Currently, control of viral outbreaks such as Ebola and norovirus consists mostly of interventional methods like isolation and case management. Globalization has made these and other “developing world” diseases a threat to industrialized nations with little or no treatments available.

Chemists at Auburn University have developed a collection of enantiomeric derivatives of the antiviral compound neplanocin A, which show broad spectrum antiviral activity. Many of these compounds have a different antiviral mechanism than neplanocin A and a corresponding low-toxicity profile. Variants of these compounds can have different antiviral activities, meaning different viruses can be targeted through “stereochemical tweaking” of compounds. Several compounds were validated by the NIH in mouse models for Ebola, human cytomegalovirus, norovirus, and dengue. Activity against other viruses were validated by NIH in preclinical cell culture studies. Additional animal studies are under way.

**Status:**
- Subject of issued patents in the U.S. ([9,657,048](https://www.google.com) and [10,227,373](https://www.google.com)) and Australia (2015301248)
- Pending patent applications in US, EPO, Canada, Japan and Australia
- Several compounds validated against several viruses by the NIH in mice
- These compounds are available for exclusive or non-exclusive licensing

<table>
<thead>
<tr>
<th>Virus</th>
<th>L-Iso EC₅₀ (µM)</th>
<th>L-Deazaïso</th>
<th>D-Deazaïso</th>
<th>Annual cases</th>
<th>Annual Societal Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norovirus</td>
<td>0.784</td>
<td>-</td>
<td>-</td>
<td>&gt;1 million (US/EU/CA)</td>
<td>$888 societal cost (US)</td>
</tr>
<tr>
<td>CMV</td>
<td>0.11</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
<td>~80% of the US</td>
<td>Low Billions</td>
</tr>
<tr>
<td>Hep B</td>
<td>7.2</td>
<td>-</td>
<td>-</td>
<td>&gt; 4 MM (Global)</td>
<td>$2 BB (US/Korea)</td>
</tr>
<tr>
<td>Ebola</td>
<td>0.38</td>
<td>&lt;0.32</td>
<td>&lt;0.32</td>
<td>27,000 (latest outbreak)</td>
<td>$1.6 BB (latest outbreak)</td>
</tr>
<tr>
<td>Dengue</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
<td>390 million (Global)</td>
<td>$46 MM</td>
</tr>
<tr>
<td>Measles</td>
<td>&lt;0.4</td>
<td>8.7</td>
<td>&lt;0.1</td>
<td>&lt;1000 (US)</td>
<td>&gt;$12 MM (US/EU)</td>
</tr>
</tbody>
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Reference: Antiviral compounds

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Department of Chemistry & Biochemistry

**Additional Available Technologies:**
- Life Sciences  
- Physical Sciences

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