Supplementary Materials:

**Figure S1:** Image of optic microscope 100x of (a) strain MCB2 showing different stages of sporulation cycle. Additionally, (b) SEM observation of crystal protein during sporulation of the mix between *L. sphaericus* MCB1 and MCB2.

**Figure S2:** SDS-PAGE gel of S-layer purification in MCB1 and MCB2

**Table S1:** Mortality bioassays with *L. sphaericus* on larvae of *Culex quinquefasciatus* and *Aedes aegypti*. Experiments were carried out in triplicate and the control was only with the larvae, while *L. sphaericus* strain 2362 was used as positive control.

<table>
<thead>
<tr>
<th>Treatment</th>
<th><em>C. quinquefasciatus</em> 24 hours</th>
<th><em>A. aegypti</em> 24 hours</th>
<th><em>C. quinquefasciatus</em> 48 hours</th>
<th><em>A. aegypti</em> 48 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0 ± 0.000</td>
<td>1 ± 1,527</td>
<td>5 ± 1,000</td>
<td>1 ± 1,000</td>
</tr>
<tr>
<td>2362</td>
<td>18 ± 0.577</td>
<td>1 ± 0.577</td>
<td>18 ± 0.000</td>
<td>5 ± 1,154</td>
</tr>
<tr>
<td>MCB1</td>
<td>18 ± 1.732</td>
<td>5 ± 1.732</td>
<td>19 ± 1.154</td>
<td>7 ± 1,527</td>
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<tr>
<td>MCB2</td>
<td>1 ± 0.577</td>
<td>1 ± 0.577</td>
<td>16 ± 0.577</td>
<td>3 ± 2.309</td>
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