GLA-AF, a pure synthetic hexaacylated lipid A derivative is a novel, clinical-stage, formulated at 2 mg/ml of Na polypeptide structures leading to reduced fecundity and worm burden. The recombinant iron, which can generate toxic reactive oxygen species that can damage parasite of Alhydrogel® in imidazole, glucose and phosphate buffer. Drug Substance was hematin byproducts generated during the blood degradation process. Antibodies duration of the immune response to these antigens which may be weakly antigens like reduced glutathione to a variety of electrophiles. Recombinant Vaccine glutathione-S-transferase-1 (Necator americanus population suffers from an increased susceptibility to infectious diseases of immunocompromised individuals. A non-toxic derivative of LPS, (Fendrix Adjuvants like CpGs, MPL, GLA-AF etc in combination with alum adjuvanted and aluminum phosphate (alum) were the only adjuvants in approved human hexaacylated lipid A derivative when compared to MPL which is naturally-

### Table 1: Study Design

<table>
<thead>
<tr>
<th>Group</th>
<th>GLA-AF µg</th>
<th>Alhydrogel® µg</th>
<th>Alum µg</th>
<th>GLA/Affinity (%)</th>
<th>Number of Mice</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.25</td>
<td>18.15</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>0.5</td>
<td>36.30</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>72.60</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>1.9</td>
<td>140.59</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

### Table 2: Antibody Levels (Anti-GST-1 IgG in GMU)

<table>
<thead>
<tr>
<th>Group</th>
<th>Dose (µg)</th>
<th>Day 14</th>
<th>Day 28</th>
<th>Day 49</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.25</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>B</td>
<td>0.5</td>
<td>1.5</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>3.5</td>
<td>5.6</td>
<td>7.0</td>
</tr>
<tr>
<td>D</td>
<td>1.9</td>
<td>5.6</td>
<td>9.0</td>
<td>11.5</td>
</tr>
</tbody>
</table>

### Table 3: fold rise in anti-GST-1 IgG in GMU

<table>
<thead>
<tr>
<th>Group</th>
<th>Dose (µg)</th>
<th>Day 14</th>
<th>Day 28</th>
<th>Day 49</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.25</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>B</td>
<td>0.5</td>
<td>1.5</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>3.5</td>
<td>5.6</td>
<td>7.0</td>
</tr>
<tr>
<td>D</td>
<td>1.9</td>
<td>5.6</td>
<td>9.0</td>
<td>11.5</td>
</tr>
</tbody>
</table>

### Results

- The study was comprised of 200 BALB/c Mice (see Table 1 for experimental protocol). Ten BALB/c mice per group were immunized twice intramuscularly (i.m.) at 5-week intervals with 5.6 µg GST-1/44.8 µg Alhydrogel® alone (high-dose formulation) or with 5.6 µg GST-1/14.9 µg Alhydrogel® mixed with varied doses of GLA-AF. Dose of GLA-AF mixed with varied doses of GLA-AF. Table 1 lists the doses and groups in detail. A recombinant Vaccine GST-1 (Necator americanus) was used to generate fully formulated vaccine.

### References