**MPLA (PHAD®)**  
Monophosphoryl Lipid A (Synthetic) (PHAD®)

699800P-1mg

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**Certificate of Analysis**

**Molecular Weight**: 1763.469  
**Chemical Formula**: C_{96}H_{184}N_{3}O_{22}P

**Physical State**: Powder

**Storage**: -20°C

**Expiration Date**: One year from date of receipt

**M Lot Number**: 5086PGC029

**Avanti Lot Number**: 699800P-1MG-C-029

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<table>
<thead>
<tr>
<th>ANALYSIS</th>
<th>SPECIFICATION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Examination</td>
<td><strong>Powder</strong>: White solid which contains no foreign matter</td>
<td>Pass</td>
</tr>
<tr>
<td>TLC</td>
<td>&gt;99% Purity</td>
<td>All Pass</td>
</tr>
<tr>
<td>(75:25:3 Chloroform: Methanol: Water)</td>
<td>Ninhydrin: negative Iodine: one major spot Phosphorus: positive Charring: positive Water dip: one major spot</td>
<td></td>
</tr>
<tr>
<td>HPLC-ELSD</td>
<td>NLT 99% (AUC)</td>
<td>100% (AUC)</td>
</tr>
<tr>
<td>Proton NMR</td>
<td>NMR spectrum consistent with reference structure</td>
<td>Consistent with structure</td>
</tr>
<tr>
<td>Phosphorus NMR</td>
<td>NMR spectrum consistent with reference structure</td>
<td>Consistent with structure</td>
</tr>
</tbody>
</table>

**Approved By:**

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