Ricin Toxoid, Recombinant with N-Terminal Histidine Tag

**Catalog No. NR-4477**
This reagent is the tangible property of the U.S. Government.

**Product Description:** NR-4477 is a genetically inactivated ricin toxoid. Catalytic Glu and Arg residues in the enzyme active site have been mutagenized to create a non-toxic protein. The protein is expressed recombinantly as a single 62 kDa polypeptide containing both the A and B subunits. It also has an additional amino-terminal histidine-tag sequence. This toxoid substance is prone to aggregation. The material precipitates at neutral pH but remains soluble in basic buffer of pH 8 or higher. The protein migrates through SDS-PAGE gel as a mixture of monomer, dimer, trimer and higher order species.

**Lot:** 57680178  **Manufacturing Date:** 14JUN2012

<table>
<thead>
<tr>
<th>TEST</th>
<th>SPECIFICATIONS</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear and colorless</td>
<td>Clear and colorless</td>
</tr>
<tr>
<td>SDS-PAGE (SYPRO Orange Densitometer Scan)</td>
<td>Protein bands of interest represent &gt; 95% of total staining intensity above background</td>
<td>Toxoid monomer and multimers represent &gt; 98% of total staining intensity above background (Figure 1)</td>
</tr>
<tr>
<td>SE LDI-TOF Mass Spectrometry</td>
<td>Measured mass is within 5% of theoretical mass</td>
<td>Measured mass of 61752 Da is within 0.05% of theoretical mass</td>
</tr>
<tr>
<td>SE LDI-TOF Mass Spectrometry of Trypsin Digest</td>
<td>&gt; 50% of total residues accounted for in peptides of expected mass</td>
<td>57% of total residues accounted for in peptides of expected mass</td>
</tr>
<tr>
<td>Concentration by Bicinchoninic Acid(^1)</td>
<td>Report results</td>
<td>1.0 mg/mL</td>
</tr>
<tr>
<td>Functional Activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Blot (Figure 2)(^2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NR-4477</td>
<td>Reactive</td>
<td>Reactive</td>
</tr>
<tr>
<td>Carbonic anhydrase</td>
<td>Non-reactive</td>
<td>Non-reactive</td>
</tr>
<tr>
<td>Cytotoxicity in Vero Cells(^3)</td>
<td>Report results</td>
<td></td>
</tr>
<tr>
<td>NR-4477</td>
<td>Report results</td>
<td></td>
</tr>
<tr>
<td>Active ricin toxin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterility</td>
<td>0.22 µm filter-sterilized</td>
<td>0.22 µm filter-sterilized</td>
</tr>
<tr>
<td>Absorbance Ratio (OD(<em>{280})/OD(</em>{260}))</td>
<td>Report results</td>
<td>1.6</td>
</tr>
<tr>
<td>Endotoxin Content (Limulus Amoebocyte Lysate Assay)</td>
<td>&lt; 10,000 EU/mg</td>
<td>&lt; 250 EU/mg</td>
</tr>
</tbody>
</table>

\(^1\) BSA standard curve  
\(^2\) Using mouse monoclonal antibody to ricin toxin A chain (BEI Resources NR-843)  
\(^3\) Determined by the number of cells that survive 48 hours after challenge
Date: 20 Nov 2014

Signature: [Signature]

Title: Technical Manager, BEI Authentication or designee

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