Ricin Toxin B Subunit with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*

**Catalog No. NR-854**
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**For research use only. Not for human use.**

**Contributor and Manufacturer:**
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**Product Description:**
Ricin toxin is a glycoprotein that can be isolated from the seeds of the castor bean plant *Ricinus communis*. Structurally, ricin toxin consists of two polypeptide subunits, A and B, that are linked by a disulfide bond. The A subunit of ricin toxin catalytically inactivates the eukaryotic 28S ribosomal RNA subunit resulting in the inhibition of protein synthesis and death of the cell. The ricin toxin B subunit is a galactose-specific lectin that mediates the binding and delivery of the toxin to target cells. The sequence of the *R. communis* gene for the ricin toxin precursor protein has been reported (GenBank: X03179).

NR-854 is a recombinant form of the B subunit of ricin toxin. The amino acid sequence includes an N-terminal histidine tag (MRQSHHHHHHTDPH) and amino acid residues 315 to 576 of the ricin toxin precursor. A QIAGEN pQE-31 vector was used to express the recombinant protein in *Escherichia coli*. The protein was purified by nickel affinity chromatography. NR-854 has a theoretical molecular weight of approximately 30,672 daltons. The predicted amino acid sequence of NR-854 is shown below in Table 1.

**Material Provided:**
Each vial of NR-854 contains approximately 1 mg of recombinant ricin toxin B subunit suspended in 7 M urea, 25 mM imidazole, and 100 mM sodium phosphate buffer (pH 7.6). The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

**Packaging/Storage:**
NR-854 was packaged aseptically in plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Storage for brief periods at 2°C to 8°C may be acceptable for some applications. Repeated freeze-thaw cycles should be avoided.

**Functional Activity:**
NR-854 reacts specifically with polyclonal antibody to ricin holotoxin and monoclonal antibody to ricin B subunit as determined by Western blot analysis.

**Citation:**
Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: Ricin Toxin B Subunit with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*, NR-854.”

**Biosafety Level: 1**

**Disclaimers:**
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**References:**

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Table 1 – Predicted Protein Sequence

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<th></th>
<th>MRGSHHHHHH</th>
<th>TDPHAVCMOD</th>
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<th>NGLCVDVRDG</th>
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Non-ricin residues are underlined.