

***Bordetella pertussis* Toxin, Salt-free**

**Catalog No. NR-31826**

**For research use only. Not for human use.**

NR-31826 is intended for research use by qualified personnel only. It is not intended for use in humans or as a diagnostic reagent.

**Contributor:**

BEI Resources

**Manufacturer:**

List Biological Laboratories, Inc.

**Product Description:**

Pertussis toxin is produced by virulent strains of *Bordetella pertussis* (*B. pertussis*), which cause whooping cough. The toxin elicits a variety of physiological responses including induction of lymphocytosis, stimulation of insulin secretion, and sensitization to histamine.<sup>1-4</sup> Treatment of Chinese hamster ovary (CHO) cells with purified toxin results in a unique growth pattern, providing a useful *in vitro* assay for the toxin.<sup>5</sup> Pertussis toxin catalyzes the ADP-ribosylation of the G<sub>1</sub> regulatory subunit of adenylate cyclase,<sup>6,7</sup> and it is this activity which is believed to be responsible for the physiological and cellular effects of the toxin.

NR-31826 was isolated from the supernatant of a culture of *B. pertussis* by a modification of the method of Cowell et al.<sup>8</sup> The purified protein consists of five dissimilar subunits migrating as distinct bands on SDS-PAGE gels: S-1 (molecular weight 28000 da), S-2 (23000 da), S-3 (22000 da), S-4 (11700 da), and S-5 (9300 da). S-1 is the A protomer (responsible for the enzymatic activity of the toxin), and S-2 to S-5 comprise the B oligomer (responsible for the binding of the toxin to the cell surface).<sup>9</sup> NR-31826 contains no detectable fimbrial hemagglutinin on gels. The level of contaminating adenylate cyclase activity is shown on the Certificate of Analysis.

**Material Provided:**

Each vial contains approximately 50 µg (lyophilized) of Pertussis toxin. The protein content is shown on the Certificate of Analysis.

Note: This product is not activated. Activation can be achieved by pre-incubating the toxin with dithiothreitol (DTT). See Kaslow et al., for conditions.<sup>10</sup>

**Packaging and Storage:**

This product was packaged aseptically, lyophilized, and sealed under vacuum. The product is provided on refrigerated bricks and should be stored at 2°C to 8°C prior to

and following reconstitution. Do not freeze.

**Reconstitution and Storage:**

Reconstitute with sterile purified water, a sterile buffer of your choice or, for long term storage, a high ionic strength buffer, such as sterile 0.1 M sodium phosphate pH 7.0, 0.5 M NaCl. Mix the product gently prior to use. Always handle gently. Do not vortex.

**Toxicity:**

Despite its name, Pertussis toxin is not considered hazardous. However, it should be handled only by trained laboratory personnel using good laboratory technique. Wear appropriate protective laboratory attire including lab coat, gloves and safety glasses. Do not mouth pipette, inhale, ingest or allow to come into contact with open wounds. Wash thoroughly any area of the body that comes into contact with the product. Avoid accidental autoinoculation by exercising extreme caution when handling in conjunction with any injection device. Only individuals who were immunized in childhood against whooping cough should work with this product. If swallowed, induce vomiting. If skin pricking should occur, induce bleeding and flush with copious amounts of water. In the event of accidental injection, consult a physician or contact the Centers for Disease Control. In adults immunized against whooping cough, no long term ill effects are likely.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Bordetella pertussis* Toxin, Salt-free, NR-31826."

**Biosafety Level: 2**

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2007; see [www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

**Disclaimers:**

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