ENTEROTOXIN TYPE B from *Staphylococcus aureus*

Enterotoxin B is an extracellular toxin produced by certain strains of *Staphylococcus aureus*.¹ Many cases of food poisoning in the U.S. and worldwide involve *Staphylococcus aureus* enterotoxins.² ³ In addition, enterotoxins can be found in cases of toxic shock syndrome⁴ and have been implicated in the autoimmune disease, rheumatoid arthritis.⁵ ⁶

Enterotoxin B is synthesized as a precursor protein of 266 amino acids. This precursor is then activated during excretion of the protein by cleavage of an N-terminal portion of the molecule.⁷ ⁸ The active enterotoxin B is a single 239 amino acid chain of molecular weight 28,000 daltons and isoelectric point of 8.6.⁹

This protein causes emesis and diarrhea in animals and elicits a pyrogenic response.¹⁰ The emetic dose 50% in animals is approximately 1 μg/kg intragastrically and 0.1 to 0.5 μg/kg intravenously. Humans are more sensitive.¹¹

Enterotoxin B is a strong mitogen, inducing DNA and interferon synthesis in lymphocytes. This protein has been classified as a “superantigen” that binds to major histocompatibility complex (MHC) class II molecules.¹² This activity elicits a number of reactions from the host immune system including; cytokine gene expression,¹³ phospholipase C activation, T-cell stimulation and serotonin release from mast cells.¹⁴ In addition to causing the above immunogenic reactions, Staphylococcal enterotoxin B and its toxoid have been used to vaccinate monkeys by aerosol immunization.¹⁵ ¹⁶

Enterotoxin B from List Biological Laboratories, Inc. is purified by ion exchange chromatography from *Staphylococcus aureus* strain S6. The purified protein migrates as a single major band when run on SDS-polyacrylamide gels. This product is provided as an aseptically prepared, lyophilized product, sealed under vacuum.

This product is intended for research purposes only and is not for use in humans or as diagnostic agent. For further information, please contact List Biological Laboratories, Inc.

### Ordering Information

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### References

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