

***Clostridium botulinum*, Strain VPI 1731
(Type B, Non-Proteolytic)**

Catalog No. NR-273

(Derived from ATCC® 25765™)

For research only. Not for human use.

Contributor:

ATCC®

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Clostridiaceae*, *Clostridium*

Species: *Clostridium botulinum*

Strain: VPI 1731 (also referred to as Eklund 17B, CDC-4848)

Neurotoxin Type:¹⁻³ B (non-proteolytic)

Original Source: *Clostridium botulinum* (*C. botulinum*), strain VPI 1731 was isolated by Mel Eklund and transferred to Dr. Louis D. S. Smith of the Virginia Polytechnic Institute (VPI) who deposited the material to the ATCC® in 1970.¹

Comment: The complete genome sequence of *C. botulinum*, strain VPI 1731 is available [GenBank: [CP001056](#) (chromosome) and [CP001057](#) (pCLL plasmid)].

C. botulinum is a Gram-positive spore-forming anaerobe found in soil, dust and marine sediments throughout the world.⁴ Most clostridia will not grow under aerobic conditions and vegetative cells are killed by exposure to oxygen. Their spores, however, are able to survive long periods of exposure to air. In their active form, these bacteria secrete powerful neurotoxins that result in the paralytic illness botulism.⁴

Botulism toxin (BoNT) types are distinguished by the inability of polyclonal antibodies that neutralize one toxin type to neutralize any of the other toxin types. There are currently eight types of BoNTs designated by the letters A through H.^{5,6}

Material Provided:

Each vial contains approximately 0.7 mL of bacterial culture in Modified Reinforced Clostridial broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-273 was packaged aseptically, in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

Modified Reinforced Clostridial broth or Reinforced Clostridial broth or equivalent

Modified Reinforced Clostridial agar or Reinforced Clostridial agar or Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Anaerobic

Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 48 to 72 hours.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: *Clostridium botulinum*, Strain VPI 1731 (Type B, Non-Proteolytic), NR-273.”

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, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. ATCC®, Personal Communication.
2. Davis, T. O., et al. "Development of a Transformation and Gene Reporter System for Group II, Non-Proteolytic *Clostridium botulinum* Type B Strains." J. Mol. Microbiol. Biotechnol. 2 (2000): 59-69. PubMed: 10937489.
3. Franciosa, G., et al. "Evidence Plasmid-Borne Botulinum Neurotoxin Type B Genes are Widespread among *Clostridium botulinum* Serotype B Strains." PLoSone 4 (2009): e4829. PubMed: 19287483.
4. Lindström, M. K., et al. "Identification of *Clostridium botulinum* with API 20 A, Rapid ID 32 A and RapID ANA II." FEMS Immunol. Med. Microbiol. 24 (1999): 267-274. PubMed: 10397310.
5. Lövenklev, M., et al. "Relative Neurotoxin Gene Expression in *Clostridium botulinum* Type B, Determined using Quantitative Reverse Transcription-PCR." Appl. Environ. Microbiol. 70 (2004): 2919-2927. PubMed: 15128552.
6. Hill, K. K., et al. "Genetic Diversity among Botulinum Neurotoxin-Producing Clostridial Strains." J. Bacteriol. 189 (2007): 818-832. PubMed: 17114256.

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