

### ***Bacillus thuringiensis*, Strain HD-1 (NRRL B-3792)**

#### **Catalog No. NR-610**

(Derived from ATCC® 33679™)

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

#### **Contributor:**

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#### **Product Description:**

Bacteria Classification: *Bacillaceae*, *Bacillus*

Species: *Bacillus thuringiensis*

Strain: HD-1 (NRRL B-3792)

Serovar: *kurstaki*

Serotype: H3:3a,3b<sup>1</sup>

Isolation: *Bacillus thuringiensis* (*B. thuringiensis*), strain HD-1 was isolated from diseased insect (*Pectinophora gossypiella*) larvae.

Comment: NR-610 was deposited to the ATCC® as *B. thuringiensis*, strain NRRL B-3792. Currently, this strain is referred to as HD-1 by the ARS (NRRL) culture collection and in the literature.<sup>2-6</sup>

*B. thuringiensis* is a Gram-positive bacterium commonly found in soil. It is well-known for the production of insecticidal toxin during sporulation.<sup>3</sup> A large number of strains have been isolated from dead insects, most notably the lepidopterous species (moths and butterflies). The HD-1 strain is highly potent and has been commercially produced in the USA for many years as a means of insect control.<sup>4</sup> Many of the toxin genes that are specific for a variety of insects have been studied and are being used in genetically modified plants which have been engineered to produce the toxin themselves.<sup>3</sup>

#### **Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol.

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

#### **Packaging/Storage:**

NR-610 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:

Tryptic Soy Broth or equivalent

Tryptic Soy Agar or equivalent

##### Incubation:

Temperature: 30°C

Atmosphere: Aerobic

##### 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 slant and/or plate at 30°C for 24 hours.

#### **Citation:**

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Bacillus thuringiensis*, Strain HD-1 (NRRL B-3792), NR-610."

#### **Biosafety Level: 1**

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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### References:

1. de Barjoc, H. and F. Lemille. "Presence of Flagellar Antigenic Subfactors in Serotype 3 of *Bacillus thuringiensis*." J. Invertebr. Pathol. 15 (1970): 139-140. PubMed: 5442846.
2. Johnson, D. E. and B. Freedman. "Toxicity of *Bacillus thuringiensis* Spo<sup>-</sup> Cr<sup>+</sup> Mutants for the European Corn Borer *Ostrinia nubilalis*." Appl. Environ. Microbiol. 42 (1981): 385-387. PubMed: 16345839.
3. Roh, J. Y., et al. "*Bacillus thuringiensis* as a Specific, Safe, and Effective Tool for Insect Pest Control." J. Microbiol. Biotechnol. 17 (2007): 547-559. PubMed: 18051264.
4. Yamamoto, T., et al. "Expression of Three Genes Coding for 135-Kilodalton Entomocidal Proteins in *Bacillus thuringiensis kurstaki*." Curr. Microbiol. 17 (1988): 5-12.
5. Johnson, D. E., D. M. Niezgodski and G. M. Twaddle. "Parasporal Crystals Produced by Oligosporogenous Mutans of *Bacillus thuringiensis* (Spo-Cr+)." Can. J. Microbiol. 26 (1980): 486-491. PubMed: 6247047.
6. Schnepf, H. E. and H. R. Whiteley. "Cloning and Expression of the *Bacillus thuringiensis* Protein in *Escherichia coli*." Proc. Natl. Acad. Sci. USA 78 (1981): 2893-2897. PubMed: 7019914.

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