Certificate of Analysis for NR-52278

Genomic DNA from *Geobacillus stearothermophilus*, Strain NCA 1518

Catalog No. NR-52278

Product Description:

Genomic DNA was extracted from a preparation of *Geobacillus stearothermophilus (G. stearothermophilus)*, strain NCA 1518 (also referred to as CIP 52.81 and NRS-T17). The bacterial preparation used for extraction of genomic DNA was produced by culture of BEI Resources NR-52265 lot 70033118. Genomic DNA was extracted using proprietary technology and is provided in TE buffer (10 mM Tris-HCl and 1 mM EDTA, pH 8).

Lot: 70033340 **Manufacturing Date: 12JUN2020**

TEST	SPECIFICATIONS	RESULTS
Genotypic Analysis Digital DNA-DNA hybridization (dDDH)[1]	≥ 70% dDDH value for identity to *G. stearothermophilus*	*G. stearothermophilus* (96.7%)[2]
Agarose Gel Electrophoresis	High molecular weight chromosomal DNA	High molecular weight chromosomal DNA (Figure 1)
Concentration by PicoGreen® Measurement	0.7 to 1.5 µg in 25 to 100 µL per vial	1.0 µg in 32 µL per vial (32 µg per mL)
Amount per Vial	0.7 to 1.5 µg	1.0 µg
Functional Activity by PCR Amplification 16S ribosomal RNA gene	~ 1500 base pair amplicon	~ 1500 base pair amplicon
OD_{260}/OD_{280} Ratio	1.7 to 2.1	1.8
Bacterial Inactivation 10% of total yield plated on agar for 14 days[3,4]	No viable bacteria detected	No viable bacteria detected

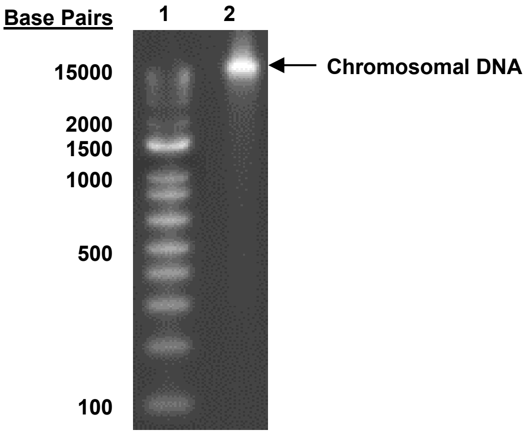
[1] Relatedness between bacterial strains has traditionally been determined using DDH. For additional information, refer to Auch, A. F., et al. "Digital DNA-DNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." Stand. Genomic Sci. 2 (2010): 117-134. PubMed: 21304684. dDDH analysis was performed using the Type (Strain) Genome Server.

[2] The whole genome of *G. stearothermophilus,* Strain NCA 1518 was sequenced using the Illumina® MiSeq® system. *De novo* contig sequences were generated using Unicycler v0.4.8-beta.

[3] 14 days under propagation conditions

[4] An extraction procedure was used that has been shown to consistently inactivate 100% of Gram-negative and Gram-positive bacteria.

Figure 1: Agarose Gel Electrophoresis



Lane 1: Invitrogen™ TrackIt™ 1 Kb Plus DNA Ladder
Lane 2: ~ 200 ng of NR-52278

/Heather Couch/
Heather Couch 22 JUL 2021
Program Manager or designee, ATCC Federal Solutions

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