

Certificate of Analysis for NR-2494

Bacillus licheniformis, Strain Gibson 46 (NCIB 9375)

Catalog No. NR-2494

(Derived from ATCC® 14580™)

Product Description: Bacillus licheniformis (B. licheniformis) is a Gram-positive, spore-forming, facultative anaerobe that is widely distributed as a saprophytic organism in the environment.

Lot¹: 4874330 Manufacturing Date: 22NOV2005

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis	Consistent with ATCC [®] 14580™	Consistent with ATCC [®] 14580 [™]
Cellular morphology	Gram-positive rod	Gram-positive rod
Colony morphology ²	Report results	Round, small
Sporulation	Positive	Positive
Anaerobic growth	Positive	Positive
Motility	Motile	Motile
β-hemolysis	Non-hemolytic	Non-hemolytic
Capsule (India ink staining)	Positive	Positive
Tenacious	Report results	Negative
Biochemical tests		
Nitrate	Positive	Positive
Glycerol	Positive	Positive
Salicin	Positive	Positive
Trehalose	Positive	Positive
Nutrient agar with 0.7% sodium bicarbonate	Growth	Growth
FAME analysis	Consistent with B. licheniformis	Consistent with B. licheniformis
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 690 bp)	Consistent with <i>B. licheniformis</i> Identical to GenBank CP000002	Consistent with <i>B. licheniformis</i> ³ Identical to GenBank CP000002
Viability (post-vialing) ²	Growth	Growth

NR-2494 was produced by propagation of seed stock (BEI Resources NRS-2494) in Nutrient Broth for 24 hours at 37°C and aerobic atmosphere. NRS-2494 was produced by propagation of ATCC[®] 14580™ (Lot 4456583) in Nutrient Broth for 24 hours at 37°C and aerobic atmosphere.

Date: 02OCT 2007 Signature: Signature on File

Title: Technical Manager, BEI Authentication or designee

ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected by the contractor to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

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800-359-7370

²24 hours at 37°C and aerobic atmosphere on Nutrient Agar.

³Also consistent with other *Bacillus* species.