

***Bacillus anthracis*, Strain UM23-1**

**Catalog No. NR-10352**

**Product Description:** *Bacillus anthracis* (*B. anthracis*), strain UM23-1 is a uracil minus (Ura<sup>-</sup>), streptomycin-resistant (str<sup>R</sup>) derivative of strain UM23, which contains the toxigenic pXO1 plasmid and lacks the pXO2 capsule plasmid.

**Lot<sup>1</sup>: 58485553**

**Manufacturing Date: 25FEB2009**

TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> Cellular morphology Colony morphology <sup>2</sup>  Sporulation Motility β-hemolysis Capsule (India ink staining) Tenacious Analytical profile index (API <sup>®</sup> 50 CHB including API <sup>®</sup> 20E; ONPG to GEL only) Nitrate reduction FAME analysis	Gram-positive rod Report results  Positive Non-motile Non-hemolytic Negative Positive  Consistent with <i>B. anthracis</i> Positive Consistent with <i>B. anthracis</i> and <i>B. cereus</i> group species	Gram-positive rod Circular, flat, entire, ground-glass, opaque and gray (Figure 1) Positive Non-motile Non-hemolytic Negative Positive  Consistent with <i>B. anthracis</i> Positive Consistent with <i>B. anthracis</i> and <i>B. cereus</i> group species <sup>3</sup>
<b>Genotypic Analysis<sup>4</sup></b> Sequencing of 16S ribosomal RNA gene (~ 750 base pairs)	Consistent with <i>B. cereus</i> group	Consistent with <i>B. cereus</i> group <sup>5</sup>
<b>PCR Assay of Extracted DNA<sup>4</sup></b> 16S ribosomal RNA gene Presence of virulence plasmids pXO1 ( <i>aaf</i> ) pXO2 ( <i>at</i> , <i>capA</i> , <i>capB</i> , <i>capC</i> )	~ 1500 bp amplicon  ~ 125 bp amplicon No amplicons	~ 1500 bp amplicon  ~ 125 bp amplicon No amplicons
<b>Viability (post-vialing)<sup>6</sup></b>	Growth	Growth

<sup>1</sup>*B. anthracis*, strain UM23-1 was deposited by Stephen Leppla, Laboratory of Bacterial Diseases, NIH/NIAID. NR-10352 was produced by inoculation of the deposited material into Tryptic Soy Broth and grown 24 hours at 37°C. Broth inoculum was added to Kolles which were grown 24 hours at 37°C to produce this lot.

<sup>2</sup>24 hours at 37°C on Tryptic Soy Agar with 5% sheep blood

<sup>3</sup>FAME "*Bacillus cereus* group" includes the species *B. anthracis*, *B. cereus*, *B. mycoides*, *B. pseudomycoides*, *B. thuringiensis* and *B. weihenstephanensis* (Slabbinck, B., et al. "Genus-wide *Bacillus* Species Identification through Proper Artificial Neural Network Experiments on Fatty Acid Profiles." *Antonie Van Leeuwenhoek* 94 (2008): 187-198. PubMed: 18322819.)

<sup>4</sup>DNA was extracted from a broth culture produced from NR-10352 (Lot: 58485553).

<sup>5</sup>*Bacillus cereus* group species (*B. cereus*, *B. thuringiensis*, *B. mycoides*, and *B. anthracis*) cannot be classified based on 16S sequence (Spencer, R. C. "*Bacillus anthracis*." *J. Clin. Pathol.* 56 (2003): 182-187. PubMed: 12610093).

<sup>6</sup>24 hours at 37°C in Tryptic Soy Broth

**Figure 1**



**Date:** 24 February 2010

**Signature:** Heather Cook

**Title:** Technical Manager, BEI Authentication or designee

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