

***Mycobacterium avium* subsp. *avium*, Strain 2285 Smooth**

**Catalog No. NR-44265**

**Product Description:** *Mycobacterium avium* (*M. avium*) subsp. *avium*, strain 2285 Smooth was isolated between 2009 and 2013 from human sputum at the National Institutes for Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), Bethesda, Maryland, USA.

**Lot<sup>1</sup>: 62009758**

**Manufacturing Date: 08NOV2013**

TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis<sup>2,3</sup></b> Cellular morphology Colony morphology <sup>4</sup>  Motility (wet mount) Growth on Brain Heart Infusion agar Growth rate Growth at 26°C Growth at 37°C Growth at 45°C Growth at 55°C Acid-fast stain Biochemical tests <sup>5</sup> Pyrazinamidase Urease Catalase Semiquantitative catalase Heat-stable catalase Iron uptake Tween 80 hydrolysis Growth in the presence of 5% sodium chloride Growth in the presence of thiophene-2-carboxylic acid hydrazide (TCH)	Gram-positive rods Report results  Report results Report results ≥ 7 days Report results Positive Report results Positive (red colonies)  Report results Negative Positive Report results Report results Negative Negative Negative Negative Positive	Gram-positive rods Punctiform, opaque and cream (Figure 1) Non-motile Growth 7 days Positive Positive Positive Negative Positive (red colonies)  Positive Positive <sup>6</sup> Positive Negative Negative Negative Positive <sup>6</sup> Negative Positive
<b>Genotypic Analysis<sup>7</sup></b> Whole Genome Sequencing (~ 5.2 megabase pairs)	≥ 99% sequence identity to <i>M. avium</i> subsp. <i>avium</i> , strain 2285 Smooth (GenBank: CP009482)	100% sequence identity to <i>M. avium</i> subsp. <i>avium</i> , strain 2285 Smooth (GenBank: CP009482)
<b>Purity (post-freeze)<sup>8,9</sup></b>	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
<b>Viability (post-freeze)<sup>4</sup></b>	Growth	Growth

<sup>1</sup>NR-44265 was produced by inoculation of the deposited material in Middlebrook 7H9 broth with ADC enrichment for 19 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub>. Broth inoculum was added to Middlebrook 7H10 agar with OADC enrichment kolles, which were grown for 18 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> to produce this lot.

<sup>2</sup>Information on *Mycobacterium* testing is available from Ribón, W. "Biochemical Isolation and Identification of Mycobacteria." *Biochemical Testing*. (2012) Jose C. Jimenez-Lopez (Ed.), InTech, <http://www.intechopen.com/books/biochemical-testing/biochemical-isolation-and-identification-of-mycobacteria> and Lévy-Frébault, V. V. and F. Portaels. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." *Int. J. Syst. Bacteriol.* 42 (1992): 315-323. PubMed: 1581193, and Magee, J. G. and A. C. Ward. "Family III. *Mycobacteriaceae* Chester 1897, 63<sup>AL</sup>." *Bergey's® Manual of Systematic Bacteriology, Second Edition, Volume Five*. (2012) Goodfellow, M., et al. (Ed.), Springer.

<sup>3</sup>Phenotypic tests rule out other slow-growing *Mycobacterium* species [Magee, J. G. and A. C. Ward. "Family III. *Mycobacteriaceae* Chester 1897, 63<sup>AL</sup>." *Bergey's® Manual of Systematic Bacteriology, Second Edition, Volume Five*. (2012) Goodfellow, M., et al. (Ed.), Springer].

<sup>4</sup>7 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> on Middlebrook 7H10 Agar with OADC enrichment

<sup>5</sup>Negative tests are observed for > 7 days.

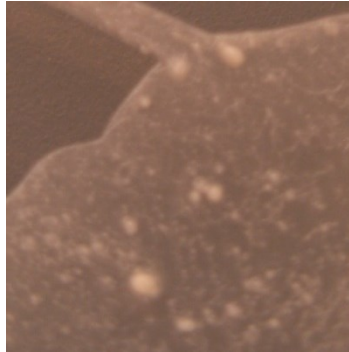
<sup>6</sup>Specifications for these tests were obtained from Lévy-Frébault, V. V. and F. Portaels. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." *Int. J. Syst. Bacteriol.* 42 (1992): 315-323. PubMed: 1581193, which indicates that most strains of *M. avium* are negative for this test; however up to 15% of strains may be positive.

<sup>7</sup>Illumina® MiSeq® sequence was analyzed with CLC Genomics Workbench Version 7.0.2.

<sup>8</sup>Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> on Middlebrook 7H10 agar with OADC enrichment.

<sup>9</sup>Middlebrook 7H10 agar with OADC enrichment contains malachite green, which may inhibit growth of contaminating microorganisms.

**Figure 1: Colony Morphology**



**Date:** 11 JUL 2016

**Signature:**

A handwritten signature in black ink, appearing to read "David C. White". The signature is written in a cursive style.

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