

***Mycobacterium tuberculosis*, Strain KT-0033**

Catalog No. NR-43818

Product Description:

Mycobacterium tuberculosis (*M. tuberculosis*), strain KT-0033 was isolated in 2009 from a human in South Korea. Strain KT-0033 was deposited as an extensively drug-resistant (XDR) Beijing genotype strain with resistance to ciprofloxacin, isoniazid, kanamycin, moxifloxacin, ofloxacin, pyrazinamide and rifampin.

Lot: 70021327¹

Manufacturing Date: 27FEB2019

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis² Cellular morphology Colony morphology ³ Growth rate Growth at 26°C Growth at 37°C Acid-fast stain Pigmentation in the dark (Scotochromogen) Photoinduction for 1 hour (Photochromogen) Nonchromogen (no pigment) Biochemical tests Niacin production ⁴ Nitrate reduction	Gram-positive rods Report results ≥ 7 days Negative Positive Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Positive Positive	Gram-positive rods Irregular, slight peaked, undulate, rough and cream (Figure 1) 21 days Negative Positive Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Positive Positive
Antibiotic Susceptibility Profile Sensititre™ System ^{5,6} Amikacin Cycloserine Ethambutol Ethionamide Isoniazid Kanamycin Moxifloxacin Ofloxacin Para-aminosalicylic acid Rifabutin Rifampin Streptomycin	Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results Report results	> 16 µg/mL 64 µg/mL 4 µg/mL ⁷ > 40 µg/mL ⁷ 4 µg/mL ⁷ > 40 µg/mL 8 µg/mL 16 µg/mL 4 µg/mL ⁷ > 16 µg/mL ⁷ > 16 µg/mL ≤ 0.25 µg/mL ⁷
Genotypic Analysis Sequencing of Heat Shock Protein 65 gene (~ 1620 base pairs)	≥ 99% sequence identity to <i>M. tuberculosis</i> , strain KT-0033 (GenBank: JLN0100004.1)	100% sequence identity to <i>M. tuberculosis</i> , strain KT-0033 (GenBank: JLNK01000011.1) ⁸
Purity (post-freeze) Middlebrook 7H10 agar with OADC enrichment ⁹ Tryptic Soy agar ¹⁰	Growth consistent with expected colony morphology Report results	Growth consistent with expected colony morphology Growth consistent with expected colony morphology
Viability (post-freeze)³	Growth	Growth

¹NR-43818 was produced by inoculation of the deposited material into Middlebrook 7H9 broth with ADC enrichment. Broth inoculum was added to Middlebrook 7H10 agar with OADC enrichment kolles, which were grown for 22 days at 37°C in an aerobic atmosphere with 5% CO₂ to produce this lot.

²Information 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.

³39 days at 37°C in an aerobic atmosphere with 5% CO₂ on Middlebrook 7H10 agar with OADC enrichment

⁴All mycobacteria produce niacin but only *M. tuberculosis* accumulates it, resulting in a positive test for *M. tuberculosis*.

⁵Sensititre™ System *Mycobacterium tuberculosis* MIC Plate, Thermo Scientific™, catalog number MYCOTB

⁶Minimum Inhibitory Concentration (MIC); No Clinical & Laboratory Standards Institute (CLSI) interpretations of the Sensititre™ System data for *M. tuberculosis* are currently available.

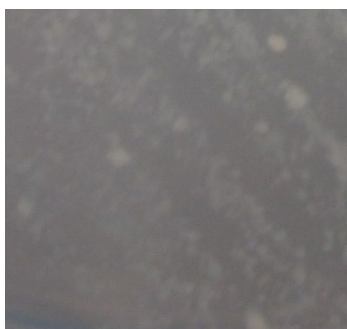
⁷For ethambutol, ethionamide, para-aminosalicylic acid, rifabutin and streptomycin, the endpoint for these drugs is determined by the well with approximately 80% inhibition of growth compared to the positive control well with no drug.

⁸Also consistent with *M. africanum*, *M. bovis*, *M. canettii*, *M. caprae* and *M. microti*

⁹Purity of this lot was assessed for 41 days at 37°C in an aerobic atmosphere with 5% CO₂.

¹⁰Purity of this lot was assessed for 39 days at 37°C in an aerobic atmosphere with 5% CO₂.

Figure 1: Colony Morphology



/Heather Couch/
Heather Couch

Program Manager or designee, ATCC Federal Solutions

08 FEB 2020

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