

***Mycobacterium tuberculosis*, Strain XTB13-122**

Catalog No. NR-49379

Product Description:

Mycobacterium tuberculosis (*M. tuberculosis*), strain XTB13-122 was isolated in 2012 from the sputum of a patient with tuberculosis in the Republic of Belarus. Strain XTB13-122 was deposited as resistant to amikacin, capreomycin, ethambutol, ethionamide, isoniazid, kanamycin, ofloxacin, rifampin and streptomycin. NR-49379 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 63 days at 37°C in an aerobic atmosphere with 5% CO₂ to produce this lot.

Lot: 64064251

Manufacturing Date: 12MAY2016

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis¹ Cellular morphology 21 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment Colony morphology 21 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment Growth rate Growth at 26°C Acid-fast stain Pigmentation in the dark (Scotochromogen) Photoinduction for 1 hour (Photochromogen) Nonchromogen (no pigment) Biochemical tests Niacin production ² Nitrate reduction Pyrazinamidase	Gram-positive rods Report results ≥ 7 days Negative Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Positive Positive Positive	Gram-positive rods Irregular, low convex, undulate, rough and cream (Figure 1) 21 days Negative Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Positive Positive Positive
Antibiotic Susceptibility Profile Sensititre™ System ^{3,4} 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	> 16 µg/mL 32 µg/mL 8 µg/mL ⁵ > 40 µg/mL ⁵ > 4 µg/mL 40 µg/mL 2 µg/mL 8 µg/mL 2 µg/mL ⁵ 8 µg/mL ⁵ > 16 µg/mL > 32 µg/mL ⁵
Genotypic Analysis Sequencing of Heat Shock Protein 65 gene (~ 420 base pairs)	≥ 99% sequence identity to <i>M. tuberculosis</i> , strain XTB13-122 (GenBank: JLLC01000004.1)	100% sequence identity to <i>M. tuberculosis</i> , strain XTB13-122 (GenBank: JLLC01000004.1) ⁶

TEST	SPECIFICATIONS	RESULTS
Purity (post-freeze) Middlebrook 7H10 agar with OADC enrichment 50 days at 37°C in an aerobic atmosphere with 5% CO ₂ Tryptic Soy agar 21 days at 37°C in an aerobic atmosphere with 5% CO ₂	Growth consistent with expected colony morphology Report results	Growth consistent with expected colony morphology No growth
Viability (post-freeze) 21 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment	Growth	Growth

¹Information 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.

²All mycobacteria produce niacin but only *M. tuberculosis* accumulates it, resulting in a positive test for *M. tuberculosis*.

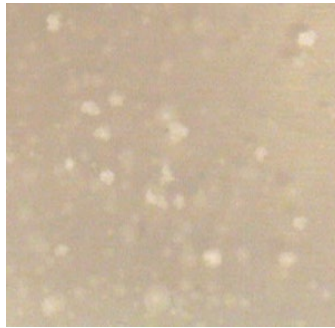
³Sensititre™ System *Mycobacterium tuberculosis* MIC Plate, Thermo Scientific™, catalog number MYCOTB

⁴Minimum Inhibitory Concentration (MIC); No Clinical & Laboratory Standards Institute (CLSI) interpretations of the Sensititre™ System data for *M. tuberculosis* are currently available.

⁵For 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.

⁶Also consistent with other members of the *M. tuberculosis* complex.

Figure 1: Colony Morphology



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