

Certificate of Analysis for NR-19013

Mycobacterium tuberculosis, Strain HN4140

Catalog No. NR-19013

Product Description: *Mycobacterium tuberculosis* (*M. tuberculosis*), strain HN4140 was isolated in 2004 from human pulmonary tissue in Texas, USA. Strain HN4140 was deposited as a non-drug-resistant strain.

Lot¹: 63344551 Manufacturing Date: 27APR2015

Growth rate Growth at 26°C Growth at 26°C Growth at 37°C Acid-fast stain Pigmentation in the dark (Scotochromogen) Photoinduction for 1 hour (Photochromogen) Nonchromogen (no pigment) Ninchromogen (no pigment) Nitrate reduction Pyrazinamidase Antibiotic Susceptibility Profile Sensititre™ System ^{5.6} Amikacin Cycloserine Ethambutol Ethionamide Isoniazid Kanamycin Moxifloxacin Ofloxacin Ofloxacin Ofloxacin Para-aminosalicylic acid Rifabutin Rifampin Report results Report results Report results Report results Sensititre Report results Sensitite Report results Sensitite Sensit	ram-positive rods regular, slight peaked, undulate, opaque, rough and cream (Figure 1) 0 days egative ositive ositive (red colonies) egative (no pigment) egative (no pigment) ositive (no pigment) ositive ositive ositive ositive
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Rifabutin Report results ≤ Rifampin Report results ≤	0.25 μg/mL
Rifampin Report results ≤	0.5 μg/mL
	0.12 μg/mL
Streptomycin Report results	0.12 μg/mL
	0.25 μg/mL
Genotypic Analysis	
	00% sequence identity to
(~ 430 base pairs) M. tuberculosis type strain	M. tuberculosis type strain
(GenBank: AL123456)	(GenBank: AL123456) ⁷
Purity (post-freeze)	
	onsistent with expected
colony morphology	
Tryptic Soy agar ⁹ No Growth N	colony morphology
Viability (post-freeze)3GrowthG	colony morphology o Growth

¹NR-19013 was produced by inoculation of the deposited material into Middlebrook 7H9 broth with ADC enrichment and grown for 27 days at 37°C in an aerobic atmosphere with 5% CO₂. Broth inoculum was added to Middlebrook 7H10 agar with OADC enrichment kolles which were grown for 25 days at 37°C in an aerobic atmosphere with 5% CO₂ to produce this lot.

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www.beiresources.org

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Tel: 800-359-7370 Fax: 703-365-2898



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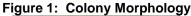
²Information on Mycobacterium testing is available from Ribón, W. "Biochemical Isolation and Identification of Mycobacteria" <u>Biochemical Testing</u>. (2012) Jose C. Jimenez-Lopez (Ed.), InTech, http://www.intechopen.com/books/biochemical-testing/biochemical-isolation-and-identification-of-mycobacteria 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.

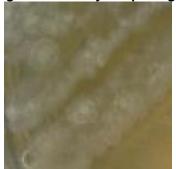
³30 days at 37°C in an aerobic atmosphere with 5% CO₂ on Middlebrook 7H10 agar with OADC enrichment

⁶No interpretations of the Sensititre™ System data for *M. tuberculosis* are currently available.

⁷Also consistent with *M. africanum*, *M. bovis* and *M. microti*

⁹Purity of this lot was assessed for 40 days at 37°C in an aerobic atmosphere with 5% CO₂ on Tryptic Soy agar plates.





Date: 30 NOV 2016 **Sig**

Signature:

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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

⁸Purity of this lot was assessed for 40 days at 37°C in an aerobic atmosphere with 5% CO₂ on Middlebrook 7H10 agar with OADC enrichment.