

## **Certificate of Analysis for NR-19002**

## Mycobacterium tuberculosis, Strain HN3147

## Catalog No. NR-19002

**Product Description:** *Mycobacterium tuberculosis* (*M. tuberculosis*), strain HN3147 was isolated in 2001 from human pulmonary tissue in Texas, USA. Strain HN3147 was deposited as a non-drug resistant strain.

Lot<sup>1</sup>: 63344540 Manufacturing Date: 20MAR2015

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis <sup>2</sup>		
Cellular morphology	Gram-positive rods	Gram-positive rods
Colony morphology <sup>3</sup>	Report results	Irregular, slight peaked, undulate, opaque, rough and cream (Figure 1)
Growth rate	≥ 7 days	18 days
Growth at 26°C	Negative	Negative
Growth at 37°C	Positive	Positive
Acid-fast stain	Positive (red colonies)	Positive (red colonies)
Pigmentation in the dark (Scotochromogen)	Negative (no pigment)	Negative (no pigment)
Photoinduction for 1 hour (Photochromogen)	Negative (no pigment)	Negative (no pigment)
Nonchromogen (no pigment)	Positive (no pigment)	Positive (no pigment)
Biochemical tests		
Niacin production⁴	Positive	Positive
Nitrate reduction	Positive	Positive
Pyrazinamidase	Positive	Positive
Genotypic Analysis Sequencing of Heat Shock Protein 65 gene (~ 440 base pairs)	≥ 99% sequence identity to  M. tuberculosis type strain (GenBank: AL123456)	100% sequence identity to  M. tuberculosis type strain (GenBank: AL123456) <sup>5</sup>
Purity (post-freeze) <sup>6</sup>	Consistent with expected colony morphology	Consistent with expected colony morphology
Viability (post-freeze) <sup>3</sup>	Growth	Growth

<sup>&</sup>lt;sup>1</sup>NR-19002 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 23 days at 37°C in an aerobic atmosphere with 5% CO₂ to produce this lot.

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<sup>&</sup>lt;sup>2</sup>Information 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, <a href="http://www.intechopen.com/books/biochemical-testing/biochemical-isolation-and-identification-of-mycobacteria">http://www.intechopen.com/books/biochemical-testing/biochemical-isolation-and-identification-of-mycobacteria</a> and Lévy-Frébault, V. V. and F. Portaels. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." <a href="https://www.intechopen.com/books/biochemical-testing/biochemical-isolation-and-identification-of-mycobacteria-isolation-and-identification

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

<sup>&</sup>lt;sup>4</sup>All mycobacteria produce niacin but only *M. tuberculosis* accumulates it, resulting in a positive test for *M. tuberculosis*.

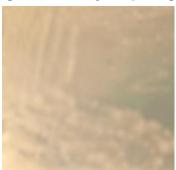
<sup>&</sup>lt;sup>5</sup>Also consistent with *M. africanum*, *M. bovis*, *M. canettii* and *M. microti* 

<sup>&</sup>lt;sup>6</sup>Purity of this lot was assessed for 21 days at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> on Middlebrook 7H10 agar with OADC enrichment and on Tryptic Soy agar plates.



## **Certificate of Analysis for NR-19002**

Figure 1: Colony Morphology



**Date:** 18 APR 2016

Signature:

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