

***Mycobacterium abscessus* subsp. *abscessus*, Strain 4530**

Catalog No. NR-44274

Product Description: *Mycobacterium abscessus* (*M. abscessus*) subsp. *abscessus*, strain 4530 was isolated between 2009 and 2013 from human sputum in Texas, USA.

Lot¹: 64446906

Manufacturing Date: 15AUG2016

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis^{2,3} Cellular morphology Colony morphology ⁴ Growth on MacConkey agar (without crystal violet) Growth rate Growth at 45°C Growth at 55°C Acid-fast stain Pigmentation in the dark (Scotochromogen) Photoinduction for 1 hour (Photochromogen) Nonchromogen (no pigment) Biochemical tests Nitrate reduction Urease Catalase Catalase (semiquantitative) Catalase (68°C) Iron uptake Tween 80 hydrolysis Growth in the presence of 5% sodium chloride Growth in the presence of thiophene-2-carboxylic acid hydrazide (TCH)	Report results Report results Positive ≤ 7 days Negative Report results Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Negative Positive Report results Report results Report results Negative Negative Positive Report results	Rods Irregular, convex, undulate, rough and white Positive 4 days Positive ⁵ Negative Positive (red colonies) Negative (no pigment) Negative (no pigment) Positive (no pigment) Negative Positive Positive Positive Negative Negative Positive Positive
Genotypic Analysis⁶ Sequencing of 16S ribosomal RNA gene (~ 1070 base pairs) Digital DNA-DNA hybridization (dDDH)	≥ 99% sequence identity to <i>M. abscessus</i> subsp. <i>abscessus</i> type strain (GenBank: X82235.1) ≥ 70% for species identification	100% sequence identity to <i>M. abscessus</i> subsp. <i>abscessus</i> type strain (GenBank: X82235.1) <i>M. abscessus</i> subsp. <i>abscessus</i> (99.8%) ^{7,8} <i>M. abscessus</i> subsp. <i>bolleti</i> (77.3%) <i>M. abscessus</i> subsp. <i>massiliense</i> (75.2%)
Purity (post-freeze) Middlebrook 7H10 agar with OADC enrichment ⁹ Tryptic Soy agar ⁹	Growth consistent with expected colony morphology Report results	Growth consistent with expected colony morphology Growth consistent with expected colony morphology
Viability (post-freeze)⁴	Growth	Growth

¹NR-44274 was produced by inoculation of the deposited material in Middlebrook 7H9 broth with ADC enrichment for 14 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 5 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.

³Phenotypic characterization of *M. abscessus* subsp. *abscessus* was performed following: Kusunoki, S. and T. Ezaki. "Proposal of *Mycobacterium peregrinum* sp. nov., nom. rev., and Elevation of *Mycobacterium chelonae* subsp. *abscessus* (Kubica et al.) to Species Status: *Mycobacterium abscessus* comb. nov." *Int. J. Syst. Bacteriol.* 42 (1992): 240-245. PubMed: 1581184.

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

⁵Specification for this test was obtained from Magee, J. G. and A. C. Ward. "Family III. *Mycobacteriaceae* Chester 1897, 63^{AL}." *Bergey's® Manual of Systematic Bacteriology, Second Edition, Volume Five.* (2012) Goodfellow, M., et al. (Ed.), Springer, which indicates that most strains of *M. abscessus* are negative for this test; however up to 10% of strains may be positive.

⁶Relatedness between bacterial strains has traditionally been determined using dDDH. For additional information refer to Auch, A.F., et al. "Digital DNA-DNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." *Stand Genomic Sci.* 2 (2010): 117-134, PubMed: 21304684.

⁷The whole genome of *M. abscessus* subsp. *abscessus*, strain 4530 (~ 5.2 megabase pairs) was sequenced using the Illumina® MiSeq® system and was assembled and analyzed with CLC Genomics Workbench Version 7.0.2.

⁸Originally deposited as *M. xenopi* and updated to *M. abscessus* subsp. *abscessus* following dDDH analysis.

⁹Purity of this lot was assessed for 14 days at 37°C in an aerobic atmosphere with 5% CO₂.

Date: 31 MAY 2017

Signature:



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