

Cryptococcus neoformans, Strain NIH9hi90

Catalog No. NR-50335

Product Description: *Cryptococcus neoformans* (*C. neoformans*), strain NIH9hi90 was derived from strain NIH 9, which was originally isolated from a human in Sassamanville, Pennsylvania, USA in 1963. *C. neoformans*, strain NIH9hi90 has been modified to overexpress heat shock protein 90 (HSP90).

Lot¹: 64362164

Manufacturing Date: 03AUG2016

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology ² Colony morphology ² CGB agar characterization ³ <i>C. neoformans</i> , strain NIH9hi90 (NR-50335) Positive control (<i>C. neoformans</i> ; ATCC [®] MYA-4564 [™]) Negative control (<i>C. gattii</i> ; ATCC [®] MYA-4563 [™])	Report results Report results Yellow (no color change) Yellow (no color change) Blue	Circular yeast form cells, some budding (Figure 1A) Circular, raised, rough; entire margin (Figure 1B) Yellow (no color change) Yellow (no color change) Blue
Genotypic Analysis Sequencing of partial 18S ribosomal RNA (rRNA) gene, internal transcribed spacer (ITS) 1, 5.8S rRNA gene, ITS 2, partial 26S rRNA (~ 520 base pairs) Sequencing of 28S rRNA gene (~ 620 base pairs) Confirmation of Serotype A (<i>C. neoformans</i> var. <i>grubii</i>)⁴ 28S ribosomal RNA gene, partial sequence; Intergenic spacer (IGS) 1, partial sequence (1770 base pairs) 5S rRNA gene (partial sequence) and IGS 2 (partial sequence) (~ 1100 base pairs)	≥ 99% sequence identity to <i>C. neoformans</i> type strain (GenBank: EU240005.1) ≥ 99% sequence identity to <i>C. neoformans</i> type strain (GenBank: KU729166.1) ≥ 97% sequence identity to <i>C. neoformans</i> var. <i>grubii</i> ≥ 97% sequence identity to <i>C. neoformans</i> var. <i>grubii</i>	99.4% sequence identity to <i>C. neoformans</i> type strain (GenBank: EU240005.1) 99.5% sequence identity to <i>C. neoformans</i> type strain (GenBank: KU729166.1) 99.5% sequence identity to <i>C. neoformans</i> var. <i>grubii</i> (GenBank: CP003821.1) 100% sequence identity to <i>C. neoformans</i> var. <i>grubii</i> (GenBank: CP003821.1)
Confirmation of Fluconazole Susceptibility⁵	Sensitive (MIC ≤ 8 µg/mL)	Sensitive (MIC = 8 µg/mL)
Purity⁶ Nutrient broth with 0.1% Yeast Extract at 25°C Nutrient broth with 0.1% Yeast Extract at 37°C	No bacterial growth No bacterial growth	No bacterial growth No bacterial growth
Viability (post-freeze)²	Growth	Growth

¹NR-50335 was produced by inoculation of the deposited material onto Yeast Mold slants and grown 2 days at 25°C in an aerobic atmosphere. Cells were harvested from the slants with 20% glycerol to produce this lot.

²5 days at 25°C in an aerobic atmosphere on Yeast Mold medium

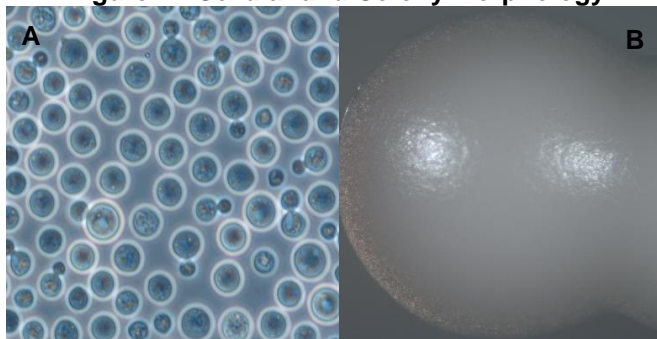
³5 days at 26°C in an aerobic atmosphere. CGB medium differentiates *C. gattii* from *C. neoformans* based on the ability of *C. gattii* isolates to grow in the presence of L-canavanine and to assimilate glycine as a sole carbon source, resulting in a blue color. *C. neoformans* isolates will remain yellow. [McTaggart, L., et al. "Rapid Identification of *Cryptococcus neoformans* var. *grubii*, *C. neoformans* var. *neoformans*, and *C. gattii* by Use of Rapid Biochemical Tests, Differential Media, and DNA Sequencing." *J. Clin. Microbiol.* 2011 (49): 2522-2527. PubMed: 21593254.]

⁴*C. neoformans* subspecies can be differentiated by IGS sequence analysis; >4% divergence is expected between species [McTaggart, L., et al. "Rapid Identification of *Cryptococcus neoformans* var. *grubii*, *C. neoformans* var. *neoformans*, and *C. gattii* by Use of Rapid Biochemical Tests, Differential Media, and DNA Sequencing." *J. Clin. Microbiol.* 2011 (49): 2522-2527. PubMed: 21593254.]

⁵For fluconazole (bioMérieux Etest[®] 510858) a MIC ≤ 8 µg/mL is sensitive and a MIC ≥ 64 µg/mL is resistant.

⁶Clarity of broth was determined by visual inspection after 15 days in an aerobic atmosphere.

Figure 1: Cellular and Colony Morphology



Date: 14 JUL 2017

Signature:



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