

Helicobacter sp., Strain R038b (deposited as Helicobacter pylori, Strain R038b)

Catalog No. NR-43734

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Product Description:

Helicobacter sp., strain R038b was isolated from gastric biopsy homogenate of a patient with a gastric ulcer in Ohio, USA. NR-43654 was deposited to BEI Resources as *Helicobacter pylori*; however, digital DNA-DNA hybridization (dDDH) analysis performed at BEI Resources resulted in reclassification to *Helicobacter* sp. The designation on the vial label refers to the old nomenclature. NR-43734 was produced by inoculation of BEI Resources seed lot 64136575 into Brucella broth. Broth inoculum was added to a Columbia agar with 7% defibrinated horse blood, 5 µg/mL trimethoprim, 5 µg/mL vancomycin, 10 µg/mL cefsulodin and 2.5 µg/mL amphotericin B plate and both were grown for 4 days at 37°C in a microaerophilic atmosphere (~ 6-16% O₂ and 2-10% CO₂). Colonies from the Columbia agar culture were suspended into the Brucella broth growth, and this biphasic culture was added to Columbia agar with 7% defibrinated horse blood, 5 µg/mL trimethoprim, 5 µg/mL vancomycin, 10 µg/mL cefsulodin and 2.5 µg/mL amphotericin B kolles, which were grown for 3 days at 37°C in a microaerophilic atmosphere to produce this lot.

Lot: 70072058

Manufacturing Date: 24JAN2025

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| TEST | SPECIFICATIONS | RESULTS |
|---|--|--|
| Phenotypic Analysis Cellular morphology Colony morphology Motility (wet mount) VITEK® MS (MALDI-TOF) | Gram-negative rods Report results Report results <i>H. pylori</i> | Gram-negative rods Circular, low convex, entire, translucent and gray Motile <i>H. pylori</i> (99.9%) |
| Antibiotic Susceptibility Profile BD BBL™ Sensi-Disc™ susceptibility test discs Metronidazole (80 µg) ¹ Nalidixic acid (30 µg) ² | Report results Report results | ≥ 80 mm 8 mm |
| Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1400 base pairs) Digital DNA-DNA hybridization (dDDH) | ≥ 99% sequence identity to <i>H. pylori</i> , strain R038b (GenBank: AMOV00000000) > 70% dDDH value for identity to <i>Helicobacter pylori</i> type species | 100% sequence identity to <i>H. pylori</i> , strain R038b (GenBank: AMOV00000000) < 70% dDDH value for identity to any <i>Helicobacter pylori</i> type species ^{3,4} |
| Purity (post-freeze) Microaerophilic 7 days at 37°C on Tryptic Soy agar with 5% defibrinated sheep blood Aerobic with 5% CO ₂ 7 days at 37°C on Tryptic Soy agar with 5% defibrinated sheep blood | Growth consistent with expected colony morphology Growth consistent with expected colony morphology | Growth consistent with expected colony morphology Growth consistent with expected colony morphology ⁵ |
| Viability (post-freeze) | Growth | Growth |

¹Test performed using metronidazole 80 µg (BBL™ 231604)

²Test performed using nalidixic acid 30 µg (BBL™ 230874)

³Relatedness between bacterial strains has traditionally been determined using DDH. 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. dDDH analysis was performed using the Type (Strain) Genome Server.

⁴The closest matching type strain is *H. pylori* CCUG 17874 with a dDDH value of 62%. This result suggests that NR-43734 may represent a new species closely related to *H. pylori*, possibly in the genus *Helicobacter*.

⁵*H. pylori* is known to show weak growth under aerobic conditions (Bury-Moné, S., et al. "Is *Helicobacter pylori* a True Microaerophile?" *Helicobacter* 11 (2006): 296-303. PubMed: 16882333.).

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