

***Helicobacter* sp., Strain Hp A-5 (deposited as *Helicobacter pylori*, Strain Hp A-5)**

Catalog No. NR-43654

Product Description:

Helicobacter sp., strain Hp A-5 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-43653 was produced by inoculation of BEI Resources seed lot 64136546 into Brucella broth. Broth inoculum was used to inoculate 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, and both the broth and the plate were grown for 4 days at 37°C in a microaerophilic atmosphere (~ 6-16% O₂ and 2-10% CO₂). Colonies from the plate were scraped into the Brucella broth growth and the mixture 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 37°C in a microaerophilic atmosphere to produce this lot.

Lot: 70072059

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 and translucent 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	58 mm 10 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 Hp A-5 (GenBank: AKOB00000000.1) > 70% dDDH value for identity to <i>Helicobacter pylori</i> type species	100% sequence identity to <i>H. pylori</i> , strain Hp A-5 (GenBank: AKOB00000000.1) < 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 (BBI™ 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 (TYGS).

⁴The closest matching type strain is *H. pylori* CCUG 17874 with a dDDH value of 55.1%. This result suggests that NR-43654 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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06 JAN 2026

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