

Bordetella pertussis, Strain J172

Catalog No. NR-59776

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Product Description:

Bordetella pertussis (*B. pertussis*), strain J172 was isolated in 2014 from a human with pertussis in Colorado, USA. Strain J172 was deposited to BEI Resources as a pertactin-negative strain with a *prn2::IS481-1613rev-ptxP3-ptxA1-ptxB2-fimH2* genotype. NR-59776 was produced by inoculation of the deposited material into Bordet Gengou broth and grown for 7 days at 37°C in an aerobic atmosphere. Broth inoculum was added to Bordet Gengou agar kolles, which were grown for 7 days at 37°C in an aerobic atmosphere to produce this lot.

Lot: 70068136

Manufacturing Date: 22MAY2024

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology 7 days at 37°C in an aerobic atmosphere on Bordet Gengou agar ¹ Motility (wet mount) VITEK® MS (MALDI-TOF)	Gram-negative rods Report results Report results <i>B. pertussis</i>	Gram-negative rods Circular, convex, entire, smooth and white (Figure 1) Non-motile <i>B. pertussis</i> (99.9%)
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1440 base pairs) Digital DNA-DNA hybridization (dDDH) ³	≥ 99% sequence identity to <i>B. pertussis</i> , strain J172 (GenBank: CP017121.1) ≥ 70% for species identification	100% sequence identity to <i>B. pertussis</i> , strain J172 (GenBank: CP017121.1) ² <i>B. pertussis</i> (93.0%) ⁴ <i>B. parapertussis</i> (88.8%) ⁵ <i>B. bronchiseptica</i> (86.6%) ⁵
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO ₂ on Tryptic Soy agar with 5% defibrinated sheep blood	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability 7 days at 37°C in an aerobic atmosphere on Bordet Gengou agar ¹	Growth	Growth

¹NR-59776 demonstrated poor primary growth on agar. However, growth on agar was supported following an initial 7-day passage in Bordet Gengou broth under the same conditions. The colony morphology and viability growth observations on Bordet Gengou agar reflect passage two.

²Also consistent with other *Bordetella* species

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.

⁴The whole genome of *B. pertussis*, strain J172 (contig total length approximately 3.78 megabase pairs) was sequenced using the Illumina® MiSeq® system.

⁵*B. pertussis*, *B. parapertussis* and *B. bronchiseptica* are closely related and often referred to as a single genomic species (Gerlach, G., et al. "Evolutionary Trends in the Genus *Bordetella*." *Microbes Infect.* 3 (2001): 61-72. PubMed: 11226855.).

Figure 1: Colony Morphology



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