Certificate of Analysis for NR-51631

Salmonella enterica subsp. *enterica*, Strain BL55334 (Serovar Typhi)

Catalog No. NR-51631

Product Description:

Salmonella enterica (S. enterica) subsp. *enterica*, strain BL55334 (serovar Typhi) was isolated in 2016 from human blood in Hyderabad, Sindh Province, Pakistan. Strain BL55334 (serovar Typhi) is an H58-lineage isolate deposited as resistant to carbapenem, cefixime, chloramphenicol, ciprofloxacin and sulfamethoxazole/trimethoprim, and susceptible to azithromycin, cefotaxime, ertapenem, imipenem and meropenem.

Lot: 70026681[1] **Manufacturing Date: 26JUN2019**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology[2]	Report results	Circular, low convex, entire, smooth and gray (Figure 1)
Motility	Report results	Motile[3]
Biochemical tests:		
Production of hydrogen sulfide	Positive	Positive[3]
Production of indole	Negative	Negative[3]
VITEK® 2 Compact (GN Card)	*Salmonella* serovar Typhi (≥ 95%)	*Salmonella* serovar Typhi (95%)[4]
Antibiotic Susceptibility Profile[5]		
VITEK® (AST-GN69 Card)		
Ampicillin	Report results	Resistant (≥ 32 µg/mL)
Amoxicillin/Clavulanic Acid	Report results	Intermediate (16 µg/mL)
Ampicillin/Sulbactam	Report results	Resistant (≥ 32 µg/mL)
Cefazolin	Report results	Resistant (≥ 64 µg/mL)
Ceftazidime	Report results	Resistant (≥ 64 µg/mL)
Ceftriaxone	Report results	Resistant (≥ 64 µg/mL)
Cefepime	Report results	Resistant (≥ 64 µg/mL)
Ciprofloxacin	Resistant	Resistant (2 µg/mL)
Ertapenem	Sensitive	Sensitive (≤ 0.5 µg/mL)
Gentamicin	Report results	Sensitive (≤ 1 µg/mL)
Imipenem	Sensitive	Sensitive (≤ 0.25 µg/mL)
Levofloxacin	Report results	Resistant (4 µg/mL)
Nitrofurantoin	Report results	Sensitive (32 µg/mL)
Piperacillin/Tazobactam	Report results	Intermediate (32 µg/mL)
Trimethoprim/Sulfamethoxazole	Resistant	Resistant (≥ 320 µg/mL)
Tobramycin	Report results	Sensitive (≤ 1 µg/mL)
Etest® antibiotic test strips[6]		
Azithromycin	Sensitive	Sensitive (4 µg/mL)
Cefixime	Resistant	Resistant (256 µg/mL)
Chloramphenicol	Resistant	Resistant (256 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1470 base pairs)	≥ 99% sequence identity to *S. enterica* subsp. *enterica* (serovar Typhi) type strain (GenBank: AE014613.1)	99.9% sequence identity to *S. enterica* subsp. *enterica* (serovar Typhi) type strain (GenBank: AE014613.1)
Serogroup Verification	Serogroup D (factor 9)	Serogroup D (factor 9)[7]
Purity (post-freeze)[8]	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)[3]	Growth	Growth

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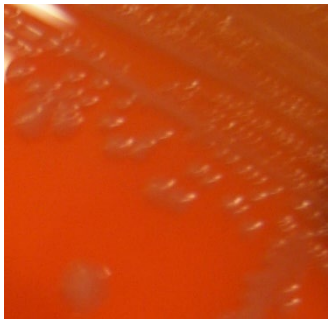
[1]NR-51631 was produced by inoculation of the deposited material into Nutrient broth and grown for 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles, which were grown for 1 day at 37°C in an aerobic atmosphere to produce this lot.
[2]1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood
[3]Test performed in Hardy Diagnostics™ SIM (Sulfide, Indole, Motility) Medium after 1 day at 37°C in an aerobic atmosphere.
[4]Percent probabilities above 90% indicate a close match to the typical biochemical pattern for the given organism. For additional information, please refer to O'Hara, C. M. and J. M. Miller. "Evaluation of the VITEK 2 ID-GNB Assay for Identification of Members of the Family *Enterobacteriaceae* and Other Nonenteric Gram-Negative Bacilli and Comparison with the VITEK GNI+ Card." J. Clin. Microbiol. 41 (2003): 2096-2101. PubMed: 12734254.
[5]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
[6]1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar
[7]Serogroup D contains serovar Typhi in addition to other serovars.
[8]Purity of this lot was assessed for 7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar with 5% defibrinated sheep blood.

Figure 1: Colony Morphology



/Heather Couch/
Heather Couch 30 SEP 2019
Program Manager or designee, ATCC Federal Solutions

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