Certificate of Analysis for NR-55649

Antimicrobial Resistance Panel 10: *Escherichia coli mrdA* Mutants

Catalog No. NR-55649

Product Description:

NR-55649 consists of a 2-member panel of *Escherichia coli* (*E. coli*), strain BW25113 derivatives harboring clinically relevant mutations in *mrdA*, which encodes for penicillin-binding protein 2 (PBP2). These mutant strains were produced through recombination with PCR-amplified mutant *mrdA*. *E. coli*, strain NB27079-CDK0001 was created by the introduction of PCR amplified *mrdA* genomic sequence from drug-resistant *E. coli* clinical isolate ATCC® BAA-2471™. *E. coli*, strain NB27079-CDK0004 was created by the introduction of PCR amplified *mrdA* genomic sequence from *E. coli* clinical isolate IHMA.

BEI Resources is committed to ensuring digital accessibility for people with disabilities. This Certificate of Analysis contains complex tables and may not be fully accessible. Please let us know if you encounter accessibility barriers and a fully accessible document will be provided: E-mail: Contact@BEIResources.org. We try to respond to feedback within 24 hours.

Table 1: Kit Components

COMPONENT NUMBER	DESCRIPTION	POINT MUTATION	LOT NUMBER	MANUFACTURING DATE
NR-51873	*E. coli*, strain NB27079-CDK0001	PBP2 L573Q	70047257	15SEP2021
NR-51874	*E. coli*, strain NB27079-CDK0004	PBP2 V5221	70047259	15SEP2021

NR-51873 and NR-51874 were produced by inoculation of deposited material into Tryptic Soy broth and grown for 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar kolles, which were grown for 1 day at 37°C in an aerobic atmosphere to produce lots 70047257 and 70047259, respectively. Quality control testing was completed under propagation conditions unless otherwise noted.

Table 2: *E. coli*, strain NB27079-CDK0001 (NR-51873)

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology	Report results	Circular, convex, entire, smooth and cream (Figure 1a)
Motility Remel™ Motility Test Medium w/TTC Indicator for 1 day at 37°C in an aerobic atmosphere	Report results	Motile
VITEK® MS (MALDI-TOF)	*E. coli*	*E. coli* (99.9%)
Antibiotic Susceptibility Profile[1] Etest® antibiotic test strips 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Aztreonam	Report results	Sensitive (0.094 µg/mL)
Ceftazidime	Report results	Sensitive (0.19 µg/mL)
Imipenem	Report results	Sensitive (1.0 µg/mL)
Meropenem	Report results	Sensitive (0.064 µg/mL)
Genotypic Analysis		
Digital DNA-DNA hybridization (dDDH)[2]	≥ 70% for species identification	*Escherichia coli* (75.1%)
Detection of *mrdA* mutation	Mutation detected	Pending
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability	Growth	Growth

BEI Resources
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

Table 3: *E. coli*, strain NB27079-CDK0004 (NR-51874)

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology	Report results	Circular, convex, entire, smooth and cream (Figure 1b)
Motility (wet mount)	Report results	Motile
VITEK® MS (MALDI-TOF)	*E. coli*	*E. coli* (99.9%)
Antibiotic Susceptibility Profile[1]		
Etest® antibiotic test strips 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Aztreonam	Report results	Sensitive (0.064 – 0.094 µg/mL)
Ceftazidime	Report results	Sensitive (0.125 – 0.19 µg/mL)
Imipenem	Report results	Sensitive (0.75 µg/mL)
Meropenem	Report results	Sensitive (0.032 µg/mL)
Genotypic Analysis		
Digital DNA-DNA hybridization (dDDH)[2]	≥ 70% for species identification	*Escherichia coli* (75.1%)
Detection of *mrdA* mutation	Mutation detected	Pending
Purity 7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability	Growth	Growth

[1]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
[2]Relatedness 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.

Figure 1a: NR-51873 Colony Morphology

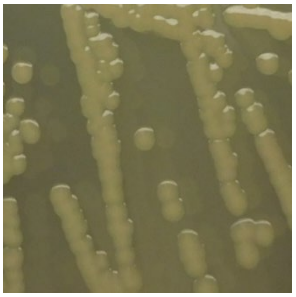
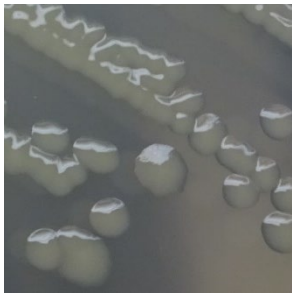


Figure 1b: NR-51874 Colony Morphology



/Sonia Bjorum Brower/
Sonia Bjorum Brower 18 JUL 2022
Technical Manager or designee, ATCC Federal Solutions

ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected by ATCC® and the contributor to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898