Certificate of Analysis for NR-55640

Antimicrobial Resistance Panel 1: *Acinetobacter baumannii* Lipid A/Fatty Acid Pathway

Catalog No. NR-55640

Product Description:

NR-55640 consists of a 2-member panel of laboratory generated deletion mutant strains of *Acinetobacter baumannii (A. baumannii)*, strain ATCC® 19606™, which are defective in lipid A biosynthesis or lipopolysaccharide (LPS) transport to the outer cell wall.

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Table 1: Kit Components

COMPONENT NUMBER	DESCRIPTION	LOT NUMBER	DATE OF MANUFACTURE
NR-51929	*A. baumannii*, strain NB48062-TMT0028	70043418	07APR2021
NR-51938	*A. baumannii*, strain NB48062-LMD0007	70043416	14APR2021

NR-51929 and NR-51938 were produced by inoculation of the 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 this lot. Quality control testing was completed under propagation conditions unless otherwise noted.

Table 2: *A. baumannii*, Strain NB48062-TMT0028 (NR-51929)

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology 2 days at 37°C in an aerobic atmosphere on Tryptic Soy agar	Report results	Circular, convex, entire, smooth and cream (Figure 1a)
Growth at 44°C ± 2°C[1] 1 day in an aerobic atmosphere on Tryptic Soy agar	Growth	Growth
Motility BBL™ Motility Test Medium w/TTC Indicator for 1 day at 37°C in an aerobic	Report results	Non-motile
VITEK® MS (MALDI-TOF)	*A. baumannii*	*A. baumannii* (99.9%)
Antibiotic Susceptibility Profile[2]		
BD BBL™ Sensi-Disc™ susceptibility test disc 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Novobiocin	Report results	30 to 33 mm
Etest® antibiotic test strips 1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Azithromycin	Report results	0.5 to 1.5 µg/mL
Rifampin	Report results	≤ 0.002 µg/mL
Ciprofloxacin	Report results	Sensitive (0.25-0.5 µg/mL)
Fusidic acid	Report results	0.125 µg/mL
Polymyxin B	Report results	Resistant (≥ 1024 µg/mL)
Kanamycin	Report results	Pending

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TEST	SPECIFICATIONS	RESULTS
Genotypic Analysis		
Digital DNA-DNA hybridization (dDDH)[3]	≥ 70% for species identification	*A. baumannii* (100%)
Presence of kanamycin resistance cassette (*kanR*2)	*kan*R gene present	*kan*R gene present
Purity	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar		
Viability	Growth	Growth

[1]Growth at 44°C differentiates *A. baumannii* from *A. calcoaceticus and A. pittii*, which do not grow at 44°C.
[2]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
[3]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.

Table 3: *A. baumannii*, Strain NB48062-LMD0007 (NR-51938)

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)
Growth at 44°C ± 2°C[1]	Growth	Growth
1 day in an aerobic atmosphere on Tryptic Soy agar		
Motility	Report results	Non-motile
BBL™ Motility Test Medium w/TTC Indicator for 1 day at 37°C in an aerobic atmosphere		
VITEK® MS (MALDI-TOF)	*A. baumannii*	*A. baumannii* (99.9%)
Antibiotic Susceptibility Profile[2]		
BD BBL™ Sensi-Disc™ susceptibility test disc		
1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Novobiocin	Report results	30 mm
Etest® antibiotic test strips		
1 day at 35°C in an aerobic atmosphere on Mueller Hinton agar		
Azithromycin	Report results	0.75 to 1.5 µg/mL
Rifampin	Report results	≤ 0.002 µg/mL
Ciprofloxacin	Report results	Sensitive (0.16 to 0.25 µg/mL)
Fusidic acid	Report results	≤ 0.125 µg/mL
Polymyxin B	Report results	Resistant (512 to 768 µg/mL)
Kanamycin	Report results	Pending
Genotypic Analysis		
Digital DNA-DNA hybridization (dDDH)[3]	≥ 70% for species identification	*A. baumannii* (100%)
Presence of kanamycin resistance cassette (*kanR*2)	*kanR*2 gene present	*kanR*2 gene present
Purity	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
7 days at 37°C in an aerobic atmosphere with and without 5% CO_2 on Tryptic Soy agar		
Viability	Growth	Growth

[1]Growth at 44°C differentiates *A. baumannii* from *A. calcoaceticus and A. pittii*, which do not grow at 44°C.
[2]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
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Figure 1a: NR-51929 Colony Morphology

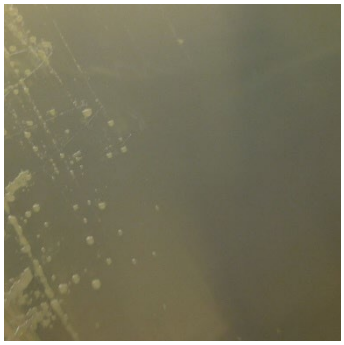

Figure 1b: NR-51938 Colony Morphology

/Heather Couch/
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Program Manager or designee, ATCC Federal Solutions

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