

Acinetobacter baumannii, Strain MRSN 31461

Catalog No. NR-52221

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Contributor:

Multidrug-Resistant Organism Repository and Surveillance Network (MRSN), Bacterial Disease Branch, Walter Reed Army Institute of Research, Silver Spring, Maryland, USA

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: Moraxellaceae, Acinetobacter

Species: Acinetobacter baumannii

Strain: MRSN 31461

Original Source: Acinetobacter baumannii (A. baumannii), strain MRSN 31461 was isolated in 2003 from a human in Europe as part of a global surveillance program.^{1,2}

Comments: A. baumannii, strain MRSN 31461 was deposited as part of the MRSN Acinetobacter baumannii Diversity Panel available from BEI Resources as NR-52248. NR-52221 was deposited as multi-locus sequence type (MLST) ST 49, sensitive to amikacin, colistin, ampicillin/sulbactam, cefepime, ceftazidime, ceftriaxone, ciprofloxacin, gentamicin, imipenem, levofloxacin, meropenem, tobramycin, trimethoprim/sulfamethoxazole and tetracycline. Strain MRSN 31461 is reported to have two beta-lactamase genes (bla_{ADC-25} and bla_{OXA-98}; conferring resistance to beta-lactams).¹ The complete genome of A. baumannii, strain MRSN 31461 is available (GenBank: [VHFT000000000](https://www.ncbi.nlm.nih.gov/nuccore/VHFT000000000)).

A. baumannii is an aerobic, Gram-negative bacillus that exhibits the ability to rapidly develop antibiotic resistance and is a major cause of hospital-acquired infection.³ The genomes of multidrug resistant strains of A. baumannii contain resistance "islands" that can contain up to 45 resistance genes. Acquisition of these antibiotic resistance genes occurs through genetic exchange of plasmids, transposons and integrons with Pseudomonas, Salmonella and Escherichia species.^{4,5}

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-52221 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

Nutrient broth or Tryptic Soy broth or equivalent
Nutrient agar or Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

Incubation:

Temperature: 37°C
Atmosphere: Aerobic

Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 1 day.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Acinetobacter baumannii, Strain MRSN 31461, NR-52221. This strain is part of the Acinetobacter baumannii Diversity Panel provided by the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) at the Walter Reed Army Institute of Research (WRAIR)."

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

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References:

1. McGann, P., Personal Communication.
2. Galac, M. R., et al. "A Diverse Panel of Clinical *Acinetobacter baumannii* for Research and Development." Antimicrob. Agents Chemother. 64 (2020): e00840-20. PubMed: 32718956.
3. Howard, A., et al. "*Acinetobacter baumannii*: An Emerging Opportunistic Pathogen." Virulence 3 (2012): 243-250. PubMed: 22546906.
4. Fournier, P.-E., et al. "Comparative Genomics of Multidrug Resistance in *Acinetobacter baumannii*." PLoS Genet. 2 (2006): e7. PubMed: 16415984.
5. Imperi, F., et al. "The Genomics of *Acinetobacter baumannii*: Insights into Genome Plasticity, Antimicrobial Resistance and Pathogenicity." IUBMB Life 63 (2011): 1068-1074. PubMed: 22034231.

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