

***Acinetobacter baumannii*, Strain MRSN 480561**

**Catalog No. NR-52244**

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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 480561

Original Source: *Acinetobacter baumannii* (*A. baumannii*), strain MRSN 480561 was isolated in 2017 from a human respiratory sample in Asia as part of a global surveillance program.<sup>1,2</sup>

Comments: *A. baumannii*, strain MRSN 480561 was deposited as part of the MRSN *Acinetobacter baumannii* Diversity Panel available from BEI Resources as NR-52244. NR-52244 was deposited as multi-locus sequence type (MLST) ST 25, sensitive to colistin and tetracycline and resistant to amikacin, ampicillin/sulbactam, ceftazidime, ceftriaxone, cefepime, ciprofloxacin, gentamicin, imipenem, levofloxacin, meropenem, tobramycin, and trimethoprim/sulfamethoxazole. Strain MRSN 480561 is reported to have five aminoglycoside transferase genes [*aac*(3)-IIa, *aac*(6')-Ian, *aph*(3'')-Ib, *aph*(6)-Id and *armA*; conferring resistance to various aminoglycosides], one rifampin ADP-ribosyltransferase gene (*arr-2*; conferring resistance to rifampin), four beta-lactamase genes (*bla*<sub>ADC-25</sub>, *bla*<sub>OXA-23</sub>, *bla*<sub>OXA-64</sub>, and *bla*<sub>PER-7</sub>; conferring resistance to beta-lactams), one chloramphenicol exporter gene (*cmiA1*; conferring resistance to chloramphenicol), one macrolide phosphotransferase gene [*mph*(E); conferring resistance to macrolide antibiotics], one ABC-F subfamily protein gene [*msr*(E); conferring resistance to erythromycin and streptogramin B antibiotics] and two sulfonamide resistance genes (*sul1* and *sul2*; conferring resistance to sulfonamides).<sup>1</sup> The complete genome of *A. baumannii*, strain MRSN 480561 is available (GenBank: [VHEQ00000000](https://www.ncbi.nlm.nih.gov/nuclot/VHEQ00000000)).

*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.<sup>3</sup> 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 the genetic exchange of plasmids, transposons, and integrons with *Pseudomonas*, *Salmonella*, and *Escherichia* species.<sup>4,5</sup>

**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-52244 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 480561, NR-52244. 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/bmbI5/index.htm](https://www.cdc.gov/biosafety/publications/bmbI5/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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