**Pseudomonas aeruginosa, Strain MRSN 315**

**Catalog No. NR-51515**
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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:** Pseudomonadaceae, Pseudomonas
- **Species:** Pseudomonas aeruginosa
- **Strain:** MRSN 315
- **Original Source:** Pseudomonas aeruginosa (P. aeruginosa), strain MRSN 315 was isolated in 2010 from a human respiratory sample as part of a surveillance program in the United States.¹

**Comments:** P. aeruginosa, strain MRSN 315 was deposited as part of the MRSN Pseudomonas aeruginosa Diversity Panel available from BEI Resources as NR-51829. NR-51515 was deposited as multi-locus sequence type (MLST) ST 108, sensitive to aztreonam, piperacillin/tazobactam, amikacin, gentamicin, ceftazidime, ciprofloxacin, cefepime, levofloxacin, meropenem and tobramycin with intermediate resistance to imipenem. Strain MRSN 315 is reported to have a chromosomal aminoglycoside phosphotransferase gene [aph(3’)-Iib; conferring resistance to kanamycin A and B, neomycin B and C, butirosin and seldomycin F5], two beta-lactamase genes (blaOXA-90 and blaPAO; conferring resistance to beta-lactams), a chloramphenicol acetyltransferase gene (catB7; conferring resistance to chloramphenicol) and a fosfomycin-inactivating gene (fosA; conferring resistance to fosfomycin).¹ The complete genome of P. aeruginosa, strain MRSN 315 is available (GenBank: RXUI000000000).

**Note:** Environmental and clinical isolates of P. aeruginosa frequently contain viruses known as prophages.² During growth, some strains from the Pseudomonas aeruginosa Diversity Panel displayed plaques resulting from the activation of their inherent prophages. Please refer to the Certificate of Analysis to determine if phage plaques were observed for this strain.

P. aeruginosa is a Gram-negative, aerobic, rod-shaped bacterium with unipolar motility that thrives in many diverse environments including soil, water and certain eukaryotic hosts. It is a key emerging opportunistic pathogen in animals, including humans and plants. While it rarely infects healthy individuals, P. aeruginosa causes severe acute and chronic nosocomial infections in immunocompromised or catheterized patients, especially in patients with cystic fibrosis, burns, cancer or HIV.³⁻⁵ Infections of this type are often highly antibiotic resistant, difficult to eradicate and often lead to death. The ability of P. aeruginosa to survive on minimal nutritional requirements, tolerate a variety of physical conditions and rapidly develop resistance during the course of therapy has allowed it to persist in both community and hospital settings.⁵,⁶

**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-51515 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:**
  - Tryptic Soy broth or Brain Heart Infusion broth or Nutrient broth or equivalent
  - Tryptic Soy agar with 5% defibrinated sheep blood or Brain Heart Infusion agar or Nutrient agar or equivalent

- **Incubation:**
  - Temperature: 37°C
  - Atmosphere: Aerobic

- **Propagation:**
  1. Keep vial 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: Pseudomonas aeruginosa, Strain MRSN 315, NR-51515. This strain is part of the Pseudomonas aeruginosa Diversity Panel provided by the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) at the Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD, USA.”

**Biosafety Level:** 2
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References:

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