Pseudomonas aeruginosa, Strain MRSN 6241

Catalog No. NR-51550
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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 6241
Original Source: Pseudomonas aeruginosa (P. aeruginosa), strain MRSN 6241 was isolated in 2011 from a human wound as part of a surveillance program in the United States.¹
Comments: P. aeruginosa, strain MRSN 6241 was deposited as part of the MRSN Pseudomonas aeruginosa Diversity Panel available from BEI Resources as NR-51829. NR-51550 was deposited as multi-locus sequence type (MLST) ST 3043, sensitive to amikacin and resistant to piperacillin/tazobactam, imipenem, ceftazidime, cefepime, gentamicin, tobramycin, aztreonam and meropenem, with intermediate resistance to ciprofloxacin and levofloxacin. Strain MRSN 6241 is reported to have an aminoglycoside acetyltransferase gene [aac(6')-lb; conferring to aminoglycosides resistance], an aminoglycoside nucleotidyltransferase gene [aadA6; conferring to aminoglycosides resistance], five chromosomal aminoglycoside phosphotransferase genes [aph(3')-Ilb, aph(3')-Vlb, aph(3')-XV, aph(6)-la, aph(6)-Id; conferring resistance to aminoglycosides], four beta-lactamase genes (blaOXA-12, blaOXA-58, blaPAO and blaPER-1; conferring resistance to beta-lactams), a chloramphenicol acetyltransferase gene (catB7; conferring resistance to chloramphenicol) and a dihydropteroate synthase gene (sul1; conferring resistance to sulfonamides).¹ The complete genome of P. aeruginosa, strain MRSN 6241 is available (GenBank: RXTL00000000).

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.³,⁴ 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-51550 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 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. Pseudomonas aeruginosa, Strain MRSN 6241, NR-51550. 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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