

***Pseudomonas aeruginosa* MRSN Diversity Panel**

Catalog No. NR-51829

This reagent is the tangible property of the U.S. Government.

For research use only. Not for use in humans.

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:

NR-51829 consists of 100 individual isolates of the *Pseudomonas aeruginosa* (*P. aeruginosa*) Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) Diversity Panel. Detailed information for each isolate, including multi-locus sequence type (MLST) and antibiotic susceptibility profile, as provided by the depositor, is available on the individual Product Information Sheet and Certificate of Analysis.¹ Please refer to Table 1 for the description, catalog number and accession number of each isolate in the panel. The complete genome of each isolate has been sequenced (GenBank: [PRJNA446057](https://www.ncbi.nlm.nih.gov/nuclseq/PRJNA446057)).

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 each isolate.

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.^{3,4,5} 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 panel contains one vial of each *P. aeruginosa* MRSN isolate for a total of 100 vials. 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:

Each isolate was packaged aseptically in cryovials and assembled into one 100-section freezer box. 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* MRSN Diversity Panel, NR-51829, provided by the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) at the Walter Reed Army Institute of Research (WRAIR), Silver Spring, Maryland, USA.”

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.

Disclaimers:

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References:

1. McGann, P., Personal Communication.
2. Tsao, Y.-F., et al. "Phage Morons Play an Important Role in *Pseudomonas aeruginosa* Phenotypes." J. Bacteriol. 200 (2018): e00189-18. PubMed: 30150232.
3. Silva Filho, L. V., et al. "*Pseudomonas aeruginosa* Infection in Patients with Cystic Fibrosis: Scientific Evidence Regarding Clinical Impact, Diagnosis, and Treatment." J. Bras. Pneumol. 39 (2013): 495-512. PubMed: 24068273.
4. Dettman, J. R., et al. "Evolutionary Genomics of Epidemic and Nonepidemic Strains of *Pseudomonas aeruginosa*." Proc. Natl. Acad. Sci. USA 110 (2013): 21065-21070. PubMed: 24324153.
5. Morita, Y., J. Tomida and Y. Kawamura. "Responses of *Pseudomonas aeruginosa* to Antimicrobials." Front. Microbiol. 4 (2014): 422. PubMed: 24409175.
6. Lister, P. D., D. J. Wolter and N. D. Hanson. "Antibacterial-Resistant *Pseudomonas aeruginosa*: Clinical Impact and Complex Regulation of Chromosomally Encoded Resistance Mechanisms." Clin. Microbiol. Rev. 22 (2009): 582-610. PubMed: 19822890.

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Table 1: *Pseudomonas aeruginosa* MRSN Diversity Panel Strains

Catalog Number	Isolate	Accession
NR-51515	<i>Pseudomonas aeruginosa</i> , MRSN 315	RXUI00000000
NR-51516	<i>Pseudomonas aeruginosa</i> , MRSN 317	RXUH00000000
NR-51517	<i>Pseudomonas aeruginosa</i> , MRSN 321	RXUG00000000
NR-51518	<i>Pseudomonas aeruginosa</i> , MRSN 552	RXTP00000000
NR-51519	<i>Pseudomonas aeruginosa</i> , MRSN 994	RXSX00000000
NR-51520	<i>Pseudomonas aeruginosa</i> , MRSN 1344	RXWG00000000
NR-51521	<i>Pseudomonas aeruginosa</i> , MRSN 1356	RXWE00000000
NR-51522	<i>Pseudomonas aeruginosa</i> , MRSN 1380	RXWD00000000
NR-51523	<i>Pseudomonas aeruginosa</i> , MRSN 1388	RXWC00000000
NR-51524	<i>Pseudomonas aeruginosa</i> , MRSN 1583	RXVX00000000
NR-51525	<i>Pseudomonas aeruginosa</i> , MRSN 1601	RXVW00000000
NR-51526	<i>Pseudomonas aeruginosa</i> , MRSN 1612	RXVV00000000
NR-51527	<i>Pseudomonas aeruginosa</i> , MRSN 1613	RXVU00000000
NR-51528	<i>Pseudomonas aeruginosa</i> , MRSN 1617	RXVT00000000
NR-51529	<i>Pseudomonas aeruginosa</i> , MRSN 1688	RXVM00000000
NR-51530	<i>Pseudomonas aeruginosa</i> , MRSN 1739	RXVL00000000
NR-51531	<i>Pseudomonas aeruginosa</i> , MRSN 1899	RXVD00000000
NR-51532	<i>Pseudomonas aeruginosa</i> , MRSN 1902	RXVC00000000
NR-51533	<i>Pseudomonas aeruginosa</i> , MRSN 1906	RXVB00000000
NR-51534	<i>Pseudomonas aeruginosa</i> , MRSN 1925	RXVA00000000
NR-51535	<i>Pseudomonas aeruginosa</i> , MRSN 1938	RXUZ00000000
NR-51536	<i>Pseudomonas aeruginosa</i> , MRSN 1948	RXUY00000000
NR-51537	<i>Pseudomonas aeruginosa</i> , MRSN 2101	RXUT00000000
NR-51538	<i>Pseudomonas aeruginosa</i> , MRSN 2108	RXUS00000000
NR-51539	<i>Pseudomonas aeruginosa</i> , MRSN 2144	RXUR00000000
NR-51540	<i>Pseudomonas aeruginosa</i> , MRSN 2444	RXUP00000000
NR-51541	<i>Pseudomonas aeruginosa</i> , MRSN 3587	RXUU00000000
NR-51542	<i>Pseudomonas aeruginosa</i> , MRSN 3705	RXUB00000000
NR-51543	<i>Pseudomonas aeruginosa</i> , MRSN 4841	RXTT00000000
NR-51544	<i>Pseudomonas aeruginosa</i> , MRSN 5498	RXTS00000000
NR-51545	<i>Pseudomonas aeruginosa</i> , MRSN 5508	RXTR00000000
NR-51546	<i>Pseudomonas aeruginosa</i> , MRSN 5519	RXTQ00000000
NR-51547	<i>Pseudomonas aeruginosa</i> , MRSN 5524	RXTO00000000
NR-51548	<i>Pseudomonas aeruginosa</i> , MRSN 5539	RXTN00000000
NR-51549	<i>Pseudomonas aeruginosa</i> , MRSN 6220	RXTM00000000
NR-51550	<i>Pseudomonas aeruginosa</i> , MRSN 6241	RXTL00000000
NR-51551	<i>Pseudomonas aeruginosa</i> , MRSN 6678	RXTK00000000
NR-51552	<i>Pseudomonas aeruginosa</i> , MRSN 6695	RXTJ00000000
NR-51553	<i>Pseudomonas aeruginosa</i> , MRSN 6739	RXTI00000000
NR-51554	<i>Pseudomonas aeruginosa</i> , MRSN 7014	RXTH00000000
NR-51555	<i>Pseudomonas aeruginosa</i> , MRSN 8130	RXTG00000000
NR-51556	<i>Pseudomonas aeruginosa</i> , MRSN 8136	RXTF00000000
NR-51557	<i>Pseudomonas aeruginosa</i> , MRSN 8139	RXTE00000000
NR-51558	<i>Pseudomonas aeruginosa</i> , MRSN 8141	RXTD00000000
NR-51559	<i>Pseudomonas aeruginosa</i> , MRSN 8912	RXTC00000000
NR-51560	<i>Pseudomonas aeruginosa</i> , MRSN 8914	RXTB00000000
NR-51561	<i>Pseudomonas aeruginosa</i> , MRSN 8915	RXTA00000000
NR-51562	<i>Pseudomonas aeruginosa</i> , MRSN 9718	RXSZ00000000
NR-51563	<i>Pseudomonas aeruginosa</i> , MRSN 9873	RXSY00000000
NR-51564	<i>Pseudomonas aeruginosa</i> , MRSN 11278	RXWS00000000
NR-51565	<i>Pseudomonas aeruginosa</i> , MRSN 11281	RXWR00000000

Catalog Number	Isolate	Accession
NR-51566	<i>Pseudomonas aeruginosa</i> , MRSN 11285	RXWQ00000000
NR-51567	<i>Pseudomonas aeruginosa</i> , MRSN 11286	RXWP00000000
NR-51568	<i>Pseudomonas aeruginosa</i> , MRSN 11536	RXWO00000000
NR-51569	<i>Pseudomonas aeruginosa</i> , MRSN 11538	RXWN00000000
NR-51570	<i>Pseudomonas aeruginosa</i> , MRSN 11976	RXWM00000000
NR-51571	<i>Pseudomonas aeruginosa</i> , MRSN 12282	RXWL00000000
NR-51572	<i>Pseudomonas aeruginosa</i> , MRSN 12283	RXWK00000000
NR-51573	<i>Pseudomonas aeruginosa</i> , MRSN 12365	RXWJ00000000
NR-51574	<i>Pseudomonas aeruginosa</i> , MRSN 12368	RXWI00000000
NR-51575	<i>Pseudomonas aeruginosa</i> , MRSN 12914	RXWH00000000
NR-51576	<i>Pseudomonas aeruginosa</i> , MRSN 13488	RXWF00000000
NR-51577	<i>Pseudomonas aeruginosa</i> , MRSN 14981	RXWB00000000
NR-51578	<i>Pseudomonas aeruginosa</i> , MRSN 15566	RXWA00000000
NR-51579	<i>Pseudomonas aeruginosa</i> , MRSN 15678	RXVZ00000000
NR-51580	<i>Pseudomonas aeruginosa</i> , MRSN 15753	RXVY00000000
NR-51581	<i>Pseudomonas aeruginosa</i> , MRSN 16344	RXVS00000000
NR-51582	<i>Pseudomonas aeruginosa</i> , MRSN 16345	RXVR00000000
NR-51583	<i>Pseudomonas aeruginosa</i> , MRSN 16383	RXVQ00000000
NR-51584	<i>Pseudomonas aeruginosa</i> , MRSN 16740	RXVP00000000
NR-51585	<i>Pseudomonas aeruginosa</i> , MRSN 16744	RXVO00000000
NR-51586	<i>Pseudomonas aeruginosa</i> , MRSN 16847	RXVN00000000
NR-51587	<i>Pseudomonas aeruginosa</i> , MRSN 17849	RXVK00000000
NR-51588	<i>Pseudomonas aeruginosa</i> , MRSN 18560	RXVJ00000000
NR-51589	<i>Pseudomonas aeruginosa</i> , MRSN 18562	RXVI00000000
NR-51590	<i>Pseudomonas aeruginosa</i> , MRSN 18754	RXVH00000000
NR-51591	<i>Pseudomonas aeruginosa</i> , MRSN 18803	RXVG00000000
NR-51592	<i>Pseudomonas aeruginosa</i> , MRSN 18855	RXVF00000000
NR-51593	<i>Pseudomonas aeruginosa</i> , MRSN 18970	RXVE00000000
NR-51594	<i>Pseudomonas aeruginosa</i> , MRSN 19711	RXUX00000000
NR-51595	<i>Pseudomonas aeruginosa</i> , MRSN 20176	RXUW00000000
NR-51596	<i>Pseudomonas aeruginosa</i> , MRSN 20190	RXUV00000000
NR-51597	<i>Pseudomonas aeruginosa</i> , MRSN 23861	RXUQ00000000
NR-51598	<i>Pseudomonas aeruginosa</i> , MRSN 25623	RXUO00000000
NR-51599	<i>Pseudomonas aeruginosa</i> , MRSN 25678	RXUN00000000
NR-51600	<i>Pseudomonas aeruginosa</i> , MRSN 25762	RXUM00000000
NR-51601	<i>Pseudomonas aeruginosa</i> , MRSN 26263	RXUL00000000
NR-51602	<i>Pseudomonas aeruginosa</i> , MRSN 29192	RXUK00000000
NR-51603	<i>Pseudomonas aeruginosa</i> , MRSN 30858	RXUJ00000000
NR-51604	<i>Pseudomonas aeruginosa</i> , MRSN 346179	RXUF00000000
NR-51605	<i>Pseudomonas aeruginosa</i> , MRSN 351791	RXUE00000000
NR-51606	<i>Pseudomonas aeruginosa</i> , MRSN 358800	RXUD00000000
NR-51607	<i>Pseudomonas aeruginosa</i> , MRSN 369569	RXUC00000000
NR-51608	<i>Pseudomonas aeruginosa</i> , MRSN 373401	RXUA00000000
NR-51609	<i>Pseudomonas aeruginosa</i> , MRSN 390231	RXTZ00000000
NR-51610	<i>Pseudomonas aeruginosa</i> , MRSN 401528	RXTY00000000
NR-51611	<i>Pseudomonas aeruginosa</i> , MRSN 409937	RXTX00000000
NR-51612	<i>Pseudomonas aeruginosa</i> , MRSN 435288	RXTW00000000
NR-51613	<i>Pseudomonas aeruginosa</i> , MRSN 436311	RXTV00000000
NR-51614	<i>Pseudomonas aeruginosa</i> , MRSN 443463	RXTU00000000