

## ***Pseudomonas aeruginosa*, Strain PAK**

### **Catalog No. NR-51337**

**For research use only. Not for use in humans.**

#### **Contributor:**

Alan Davidson, Ph.D., Professor, Department of Molecular Genetics, University of Toronto, Toronto, Ontario, Canada

#### **Manufacturer:**

BEI Resources

#### **Product Description:**

Bacteria Classification: *Pseudomonadaceae*, *Pseudomonas*

Species: *Pseudomonas aeruginosa*

Strain: PAK (also referred to as PA06)<sup>1</sup>

Original Source: *Pseudomonas aeruginosa* (*P. aeruginosa*), strain PAK was isolated from a human with cystic fibrosis.<sup>1,2,3</sup>

Comments: The complete genome of *P. aeruginosa*, strain PAK has been sequenced (GenBank: [CP020659](#)).

*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.<sup>4,5,6</sup> 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.<sup>6,7</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-51337 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 PAK, NR-51337."

#### **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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

#### **Disclaimers:**

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# References:

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2. Bondy-Denomy J., et al. "Prophages Mediate Defense Against Phage Infection Through Diverse Mechanisms." ISME J. 10 (2016): 2854-2866. PubMed: 27258950.
3. Davidson, A., Personal Communication.
4. 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.
5. 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.
6. Morita, Y., J. Tomida and Y. Kawamura. "Responses of *Pseudomonas aeruginosa* to Antimicrobials." Front. Microbiol. 4 (2014): 422. PubMed: 24409175.
7. 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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