

**Antimicrobial Resistance Panel 7:
Pseudomonas aeruginosa WaaP
(Lipopolysaccharide Heptose Kinase)
variants**

Catalog No. NR-55646

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

NR-55646 consists of a three-member panel of *P. aeruginosa* strains containing a plasmid encoding for either the wild-type lipopolysaccharide (LPS) heptose kinase WaaP or a WaaP variant containing point mutations.¹ A C-terminal histidine tag follows the WaaP protein. The mutations were designed to perturb the interaction of WaaP with its cofactor, acylated-acyl carrier protein (acyl-ACP), in either the protein-protein interaction (PPI) surface (NR-51950) or the hydrophobic tunnel (NR-51951). Both WaaP protein variants have reduced protein stability and their cells have an increased susceptibility to EDTA. WaaP depletion has been reported to cause gross changes in cellular morphology and disruption of LPS biogenesis and transport making this panel ideal for investigations involving lipopolysaccharide pathway components as potential antibiotic targets.^{1,2} The strains comprising this panel are listed in Table 1.

Table 1: Mutant Strains

Component Number	Strain	Plasmid
NR-51949	NB52019-TUN0039	pMMB206-Pa_WaaP-His
NR-51950	NB52019- TUN0041	pMMB206-WaaP-R222E_R226E-His
NR-51951	NB52019- TUN0040	pMMB206-WaaP-A214F-His

Material Provided:

Each panel contains one vial of each of the bacterial strains listed in Table 1. 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 strain 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 containing 100 µg/mL chloramphenicol or Luria Bertani (LB) broth containing 100 µg/mL chloramphenicol or equivalent

Tryptic Soy agar containing 100 µg/mL chloramphenicol or LB agar containing 100 µg/mL chloramphenicol 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: Antimicrobial Resistance Panel 7: *Pseudomonas aeruginosa* WaaP (Lipopolysaccharide Heptose Kinase) variants, NR-55646.”

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 \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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References:

1. Kreamer, N. K. K., et al. "Acylated-Acyl Carrier Protein Stabilizes the *Pseudomonas aeruginosa* WaaP Lipopolysaccharide Heptose Kinase." *Sci. Rep.* 8 (2018): 14124. PubMed: 30237436.
2. Delucia, A. M., et al. "Lipopolysaccharide (LPS) Inner-Core Phosphates are Required for Complete LPS Synthesis and Transport to the Outer Membrane in *Pseudomonas aeruginosa* PAO1." *mBio* 2 (2011): e00142-11. PubMed: 21810964.

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