

***Escherichia coli* – *Staphylococcus aureus*  
Shuttle Vector pCN57, Recombinant in  
*Staphylococcus aureus***

**Catalog No. NR-46158**

**For research use only. Not for human use.**

**Contributor:**

Richard P. Novick, M.D., Departments of Microbiology, Medicine and Molecular Pathogenesis, New York University School of Medicine, New York, New York, USA

**Manufacturer:**

BEI Resources

**Product Description:**

NR-46158 is a culture of *Staphylococcus aureus* (*S. aureus*), strain 4221 (RN9623, NRS623) containing the *Escherichia coli* (*E. coli*)-staphylococcal shuttle vector pCN57 (pNR-46158). Vector pCN57 contains the *E. coli* ColE1 replication origin, the *S. aureus* pT181 *cop-wt-repC* replicon, the *P<sub>blaz</sub>* promoter and a promoterless  $\beta$ -lactamase reporter gene, *gfpmut2*. Vector pCN57 was deposited as resistant to ampicillin and erythromycin in *E. coli* and resistant to erythromycin in *S. aureus*.<sup>1</sup>

The complete sequence and vector map of pCN57 have been determined and are available on the Certificate of Analysis for NR-46158 lot 62782862. The complete BEI Resources vector sequence (pNR-46158) is available (GenBank: [KP255997](https://www.ncbi.nlm.nih.gov/nuccore/KP255997)).

Vector pCN57 is a member of a series of novel shuttle vectors that were developed using PCR-designed cassettes to allow for easy exchange of vector components. The base shuttle vectors are comprised of (i) a staphylococcal replicon (pT181-based low-copy number, high-copy-number or thermosensitive replicons or pI258-based low-copy-number theta replicon), (ii) a staphylococcal selectable marker (erythromycin, tetracycline, chloramphenicol, kanamycin or spectinomycin resistance), (iii) an *E. coli* ColE1-based replicon (iv) an *E. coli* selectable marker (ampicillin resistance) and (v) a pUC19-derived expanded multiple cloning site (MCS). Additionally, some of the vectors may contain a staphylococcal  $\phi$ 11 phage fragment, staphylococcal pathogenicity island SaPI1 fragment, an inducible or constitutive promoter, and reporter genes.<sup>1</sup>

**Material Provided:**

Each vial of NR-46158 contains approximately 0.5 mL of bacterial culture in Casitone-Yeast (CY) broth containing 0.1 M glycerol phosphate and 10  $\mu$ g/mL erythromycin supplemented with 10% glycerol.

**Packaging/Storage:**

NR-46158 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:

Casitone-Yeast broth containing 10  $\mu$ g/mL erythromycin

Tryptic Soy agar containing 10  $\mu$ g/mL erythromycin

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 18 to 24 hours.

**Citation:**

Acknowledgment for publications should read “The following reagent was provided by the Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA) for distribution by BEI Resources, NIAID, NIH: *Escherichia coli* – *Staphylococcus aureus* Shuttle Vector pCN57, Recombinant in *Staphylococcus aureus*, NR-46158.”

**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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see [www.cdc.gov/biosafety/publications/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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**References:**

1. Charpentier E., et al. "Novel Cassette-Based Shuttle Vector System for Gram-Positive Bacteria." Appl. Environ. Microbiol. 70 (2004): 6076-6085. PubMed: 15466553.

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