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

Catalog No. NR-46158

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Manufacturer:

BEI Resources

Product Description:

NR-46158 is *Staphylococcus aureus* (*S. aureus*), strain RN 4220 (RN9623, NRS623) containing the *Escherichia coli (E. coli)*-staphylococcal shuttle vector pCN57. Vector pCN57 contains the *E. coli* ColE1 replication origin, the *S. aureus* pT181 *cop-wt-repC* replicon, the P_{blaz} promoter and a promoterless β-lactamase reporter gene, *gfpmut2*. Transformation with pCN57 leads to ampicillin resistance in *E. coli* and erythromycin resistance in *S. aureus*.[1]

The vector sequence was deposited into GenBank as pNR-46158 (GenBank: KP255997). The complete plasmid sequence and map are provided on the BEI Resources webpage.

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 ϕ11 phage fragment, staphylococcal pathogenicity island SaPI1 fragment, an inducible or constitutive promoter, and reporter genes.[1]

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Casitone-Yeast broth containing 0.1 M glycerol phosphate and 10 µg/mL erythromycin supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

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 0.1M glycerol phosphate and 10 µg/mL erythromycin
Tryptic Soy agar containing 10 µg/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 1day.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through 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 (BMBL). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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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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