**Staphylococcus aureus** subsp. *aureus*,
Strain JE2, Transposon Mutant NE12 (SAUSA300_2126)

**Catalog No. NR-46555**

For research use only. Not for human use.

**Contributor:**
Kenneth Bayles, Ph.D., Director, Center for Staphylococcal Research, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska, USA, and University of Chicago, Chicago, Illinois, USA

**Manufacturer:**
BEI Resources

**Product Description:**
*Bacteria Classification:* Staphylocoecaceae, Staphylococcus species: *Staphylococcus aureus*

Strain: JE2 (also referred to as USA300 JE2)

Transposon Mutant: NE12

**Nebraska Transposon Mutant:** SAUSA300_2126

**Original Source:** *Staphylococcus aureus* (S. aureus) subsp. *aureus*, transposon mutant NE12 was derived from *S. aureus* subsp. *aureus*, strain JE2. Mutagenesis occurred through the use of the mariner-based transposon *bursa aurealis* resulting in an erythromycin-resistant deletion strain of JE2.

*S. aureus* subsp. *aureus*, transposon mutant NE12 was created by disruption of SAUSA300_2126, which encodes for an EmrB/QacA subfamily drug resistance transporter.

**Comments:** *S. aureus* subsp. *aureus*, strain JE2 is a plasmid-cured derivative of strain LAC that was isolated in 2002 from a skin and soft tissue infection of an inmate in the Los Angeles County Jail in California, USA.

Strain JE2 is a methicillin-resistant *S. aureus* (MRSA) strain and is a USA300 isolate. USA300 isolates have the same MLST profile (ST 8), SCCmec (subtype IV), agr group (I) and spa motif (MBQBOLO) and typically carry the Panton-Valentine leukocidin (PVL) toxin genes and the arginine catabolic mobile element (ACME). USA300 is the most common cause of community-associated MRSA infection and an increasing cause of hospital-acquired infections.

In an effort to enhance the research capabilities of the staphylococcal research community, the Center for Staphylococcal Research (CSR) at the University of Nebraska Medical Center has generated the Nebraska Transposon Mutant Library, a collection of sequence-defined transposon (Tn) insertion mutants of *S. aureus*. This collection contains mutant derivatives of strain USA300 LAC, in which approximately 2,000 non-essential genes have been disrupted by the insertion of the mariner-based transposon *bursa aurealis*.

The insertion sites were identified by determining the nucleotide sequences of the junction fragments containing the end of the transposon and the flanking DNA. The gene names and descriptions associated with each of the Tn mutants were obtained from the National Center for Biotechnology Information.

Additional information is available at the Nebraska Transposon Mutant Library website.

**Material Provided:**
Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth containing 5 µg/mL erythromycin supplemented with 10% glycerol.

**Note:** If homogeneity is required for your intended use, please purify prior to initiating work. It is recommended that the presence and location of the transposon is confirmed. The Center for Staphylococcal Research has designed primers that anneal to the *bursa aurealis* transposon and are to be used in conjunction with a primer in the gene of interest to generate a PCR product. For transposons in the “plus” orientation, the primer “Upstream” (5’-CTCGATTCTATTACAGGG-3’) should be paired with a gene-specific primer. For transposons in the “minus” orientation, the primer “Buster” (5’-GCTTTTCTAAATGGTGTCAAGTAAATCAAGTAC-3’) should be paired with a gene-specific primer.

**Packaging/Storage:**
NR-46555 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 5 µg/mL erythromycin or equivalent
- **Tryptic Soy agar containing 5 µg/mL erythromycin 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 18 to 24 hours.

**Citation:**
Acknowledgment for publications should read “The following reagent was provided by the Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARS) for distribution by BEI Resources, NIAID, NIH: *Staphylococcus aureus* subsp. *aureus*, Strain JE2, Transposon Mutant NE12 (SAUSA300_2126), NR-46555.”
Biosafety Level: 2

Disclaimers:
You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

Use Restrictions:
This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

References:

ATCC® is a trademark of the American Type Culture Collection.