

## Staphylococcus aureus, Strain MRSA131

### Catalog No. HM-466

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

#### Contributor:

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#### Manufacturer:

BEI Resources

#### Product Description:

Bacteria Classification: *Staphylococcaceae*, *Staphylococcus*

Species: *Staphylococcus aureus*

Strain: MRSA131 (also referred to as Col-131)

Original Source: *Staphylococcus aureus* (*S. aureus*), strain MRSA131 was isolated from the skin of a patient with a soft tissue infection in Villavicencio, Colombia.<sup>1-3</sup>

Comments: *S. aureus*, strain MRSA131 is a community-associated methicillin-resistant *S. aureus* (MRSA) strain based on multilocus sequence typing.<sup>3</sup> Strain MRSA131 is sensitive to vancomycin, teicoplanin, chloramphenicol, linezolid, ciprofloxacin, gentamicin and rifampicin.<sup>2</sup> *S. aureus*, strain MRSA131 ([HMP ID 9528](#)) is a reference genome for [The Human Microbiome Project](#) (HMP). HMP is an initiative to identify and characterize human microbial flora. The complete genome of *S. aureus*, strain MRSA131 was sequenced at the Genome Institute at [Washington University](#) (GenBank: [AECR00000000](#)).

Note: HMP material is taxonomically classified by the depositor. Quality control of these materials is only performed to demonstrate that the material distributed by BEI Resources is identical to the deposited material.

*S. aureus* is a Gram-positive, cluster-forming coccus that normally inhabits human nasal passages, skin and mucus membranes. It is also a human pathogen and causes a variety of pus-forming infections as well as food-poisoning and toxic shock syndrome. In 1961, two years after the introduction of methicillin, a penicillinase-resistant penicillin, *S. aureus* developed methicillin-resistance due to acquisition of the *mecA* gene. For the last forty-five years hospital-acquired (HA) MRSA strains have disseminated worldwide. More recently, MRSA strains have been isolated that are not hospital acquired and are referred to as community-associated (CA) MRSA. CA-MRSA strains differ phenotypically and genotypically from HA-MRSA strains and they are more frequently recovered from skin and soft tissue sources rather than post-operative wounds.<sup>4,5</sup> Methicillin is no longer clinically used, however, the term methicillin-resistant *S. aureus* (MRSA) continues to be used to describe *S. aureus* strains resistant to all penicillins.

#### 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:

HM-466 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 equivalent

Tryptic Soy agar with 5% defibrinated sheep blood or Brain Heart Infusion 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 as part of the Human Microbiome Project: *Staphylococcus aureus*, Strain MRSA131, HM-466."

#### 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. Arias, C. A., Personal Communication.
2. [HMP ID 9528](#) (*Staphylococcus aureus*, strain MRSA131)
3. Arias, C. A., et al. "MRSA USA300 Clone and VREF-A U.S.-Colombian Connection?" *N. Engl. J. Med.* 359 (2008): 2177-2179. PubMed: 19005205.
4. Deurenberg, R. H. and E. E. Stobberingh. "The Evolution of *Staphylococcus aureus*." *Infect. Genet. Evol.* 8 (2008): 747-763. PubMed: 18718557.
5. Davis, S. L., et al. "Epidemiology and Outcomes of Community-Associated Methicillin-Resistant *Staphylococcus aureus* Infection." *J. Clin. Microbiol.* 45 (2007): 1705-1711. PubMed: 17392441.
6. McCarthy, A.J., A. A. Witney and J. A. Lindsay. "Staphylococcus aureus Temperate Bacteriophage: Carriage and Horizontal Gene Transfer is Lineage Associated." *Front. Cell Infect. Microbiol.* 8 (2012): 6. PubMed: 22919598.
7. Escobar-Perez, J., et al. "Emergence and Spread of a New Community-Genotype Methicillin-Resistant *Staphylococcus aureus* Clone in Colombia." *BMC Infect. Dis.* 17 (2017): 108. PubMed: 28143440.

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