

Enterococcus faecium, Strain E1321

Catalog No. NR-31963

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterococcaceae*, *Enterococcus*

Species: *Enterococcus faecium*

Strain: E1321 (also referred to as EnGen0054¹)

Original Source: *Enterococcus faecium* (*E. faecium*), strain E1321 was isolated in 1999 from the catheter of a hospitalized patient in Italy.^{1,2}

Comments: *E. faecium*, strain E1321 was deposited as MLST (ST) 78; resistant to gentamicin and ampicillin; and positive for *esp*.^{1,2} *E. faecium* strain E1321 is part of a genome sequencing project at the [Broad Institute](http://www.broadinstitute.org).³ The complete genome of *E. faecium*, strain E1321 has been sequenced (GenBank: [AYHF00000000](http://www.ncbi.nlm.nih.gov/GenBank/AYHF00000000)).

E. faecium is a Gram-positive, facultative, anaerobic coccus that is a commensal inhabitant of the gastrointestinal tract of both humans and animals.⁴⁻⁶ *E. faecium* is an emerging and challenging nosocomial pathogen due to its inherent hardiness and ability to develop antibiotic resistance.^{4,6} Its large open pan-genome allows for horizontal gene transfer between *E. faecium* and other pathogenic and non-pathogenic bacteria to adapt to changing environments.^{4,7} The large majority of strains isolated from nosocomial infections have been classified as CC17, with a distinct genetic lineage characterized by ampicillin resistance and a pathogenicity island carrying the *esp* gene, which is known to contribute virulence in an animal model.^{4,7,8} Two other virulence genes, *hyl* and *acm*, have been identified.⁴

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:

NR-31963 was packaged aseptically, in screw-capped plastic 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 or Tryptic Soy agar with 5% defibrinated sheep blood or Brain Heart Infusion agar or equivalent

Incubation:

Temperature: 35 to 37°C

Atmosphere: Aerobic (with or without 5% CO₂) or anaerobic

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 tube, slant and/or plate for 1 day.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Enterococcus faecium*, Strain E1321, NR-31963."

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.

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References:

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6. Arias, C. A. and B. E. Murray. "The Rise of the *Enterococcus*: Beyond Vancomycin Resistance." *Nat. Rev. Microbiol.* 10 (2012): 266-278. PubMed: 22421879.
7. Heikens, E., et al. "Identification of a Novel Genomic Island Specific to Hospital-Acquired Clonal Complex 17 *Enterococcus faecium* Isolates." *Appl. Environ. Microbiol.* 74 (2008): 7094-7097. PubMed: 18836023.
8. Willems, R. J., et al. "Global Spread of Vancomycin-Resistant *Enterococcus faecium* from Distinct Nosocomial Genetic Complex." *Emerg. Infect. Dis.* 11 (2010): 821-828. PubMed: 15963275.
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