Product Information Sheet for NR-31912

Enterococcus faecium, Strain Patient #3-1

Catalog No. NR-31912

For research use only. Not for human use.

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Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Enterococcaceae, Enterococcus*
Species: *Enterococcus faecium*
Strain: Patient #3-1 (also referred to as EnGen0312)
Original Source: *Enterococcus faecium* (*E. faecium*), strain Patient #3-1 was isolated from the stool of a human patient having dominance of vancomycin-resistant *Enterococcus* in the stool but no bacteremia.[1]
Comment: The complete genome of *E. faecium*, strain Patient #3-1 (EnGen0312) has been sequenced (GenBank: AJDX00000000).

E. faecium is a Gram-positive, facultative, anaerobic coccus that is a commensal inhabitant of the gastrointestinal tract of both humans and animals.[2-4] *E. faecium* is an emerging and challenging nosocomial pathogen due to its inherent hardiness and ability to develop antibiotic resistance.[2,4] 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.[2,5] 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.[2,5,6] Two other virulence genes, *hyl* and *acm*, have been identified.[2]

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-31912 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:
Note: Specific growth conditions are reported on the Certificate of Analysis for each lot.
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% CO_2) 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 Patient #3-1, NR-31912."

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:

1. M. S. Gilmore, Personal Communication.
2. van Schaik, W., et al. "Pyrosequencing-Based Comparative Genome Analysis of the Nosocomial Pathogen *Enterococcus faecium* and Identification of a Large Transferable Pathogenicity Island." BMC Genomics 11 (2010): 239. PubMed: 20398277.
3. Schleifer, K. H. and R. Kilpper-Bälz. "Transfer of *Streptococcus faecalis* and *Streptococcus faecium* to the Genus *Enterococcus* nom. rev. as *Enterococcus faecalis* comb. nov. and *Enterococcus faecium* comb. nov." Int. J. Syst. Bacteriol. 34 (1984): 31-34.
4. Arias, C. A. and B. E. Murray. "The Rise of the *Enterococcus*: Beyond Vancomycin Resistance." Nat. Rev. Microbiol. 10 (2012): 266-278. PubMed: 22421879.
5. 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.
6. 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.
7. Ubeda, C., et al. "Vancomycin-resistant *Enterococcus* Domination of Intestinal Microbiota Is Enabled by Antibiotic Treatment in Mice and Precedes Bloodstream Invasion in Humans." J. Clin. Invest. 120 (2010): 4332-4341. PubMed: 21099116.

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