

***Enterococcus faecalis*, Strain 599**

**Catalog No. HM-933**

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

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

**Bacteria Classification:** *Enterococcaceae*, *Enterococcus*

**Species:** *Enterococcus faecalis*

**Strain:** 599 (also referred to as 603-50427X)<sup>1</sup>

**Original Source:** *Enterococcus faecalis* (*E. faecalis*), strain 599 was isolated in 2010 in Bangkok, Thailand, from the skin of a 72-year-old diabetic woman with multiple skin abscesses due to *Mycobacterium abscessus* and pulmonary tuberculosis and was treated with meropenem, amikacin, moxifloxacin, azithromycin, isoniazid, rifampin, ethambutol, metronidazole, and linezolid for at least 3 months prior to the isolation this strain.<sup>1,2</sup>

**Comments:** *E. faecalis*, strain 599 (HMP ID 1327) was deposited as positive for the chloramphenicolflorfenicol resistance gene *cfr* that confers resistance to phenicols, lincosamides, oxazolidinones, pleuromutilins, and streptogramin A antibiotics (PhLOPS<sub>A</sub>), susceptible to vancomycin and resistant to linezolid.<sup>1,2</sup> It 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 *E. faecalis*, strain 599 was sequenced at the Genome Institute at [Washington University](#) (GenBank: [ALZ100000000](#)).

**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.

*E. faecalis* is a Gram-positive, facultatively anaerobic coccus that is a commensal inhabitant of the gastrointestinal and female genital tract.<sup>3,4</sup> It is also the most frequently isolated species, often as a mono-infection, from root canals of endodontically treated teeth with persistent apical periodontitis.<sup>5</sup> *E. faecalis* is an opportunistic pathogen and has become a serious concern in hospitals because of its inherent hardiness and high levels of antibiotic resistance.<sup>6</sup> Virulent strains often express a cytolysin toxin that is encoded on various mobile genetic elements, pathogenicity islands, and conjugative plasmids.<sup>7</sup>

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture

in Brain Heart Infusion broth supplemented with 10% glycerol.

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

**Packaging/Storage:**

HM-933 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 with 5% CO<sub>2</sub> 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 24 hours.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH as part of the Human Microbiome Project: *Enterococcus faecalis*, Strain 599, HM-933."

**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/bmb15/index.htm](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

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**References:**

1. Diaz, L., et al. "Transferable Plasmid-Mediated Resistance to Linezolid Due to *cfr* in a Human Clinical Isolate of *Enterococcus faecalis*." Antimicrob. Agents Chemother. 56 (2012): 3917-3922. PubMed: 22491691.
2. Arias, C. A., Personal Communication.
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. Chowdhury, S. A., et al. "A Trilocus Sequence Typing Scheme for Hospital Epidemiology and Subspecies Differentiation of an Important Nosocomial Pathogen, *Enterococcus faecalis*." J. Clin. Microbiol. 47 (2009): 2713-2719. PubMed: 19571023.
5. Stevens, R. H., O. D. Porras and A. L. Delisle. "Bacteriophages Induced from Lysogenic Root Canal Isolates of *Enterococcus faecalis*." Oral Microbiol. Immunol. 24 (2009): 278-284. PubMed: 19572888.
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. McBride, S. M., et al. "Genetic Variation and Evolution of the Pathogenicity Island of *Enterococcus faecalis*." J. Bacteriol. 191 (2009): 3392-3402. PubMed: 19270086.

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