

## Enterococcus faecium, Strain E0045

### Catalog No. NR-31913

### For research use only. Not for use in humans.

#### Contributor:

Michael S. Gilmore, Sir William Osler Professor of Ophthalmology, Department of Ophthalmology, Massachusetts Ear and Eye Infirmary, Boston, Massachusetts, USA

#### Manufacturer:

BEI Resources

#### Product Description:

Bacteria Classification: Enterococcaceae, Enterococcus

Species: Enterococcus faecium

Strain: E0045 (also referred to as EnGen0005)

Original Source: Enterococcus faecium (E. faecium), strain E0045 was isolated in 1992 from chicken feces in Great Britain.<sup>1</sup>

Comments: E. faecium, strain E0045 is reported to be resistant to gentamicin and vancomycin (vanA+).<sup>1</sup> The complete genome of E. faecium, strain E0045 has been sequenced (GenBank: [AHWH00000000](#)).

E. faecium is a Gram-positive, facultative, anaerobic coccus that is a commensal inhabitant of the gastrointestinal tract of both humans and animals.<sup>2,3,4</sup> E. faecium is an emerging and challenging nosocomial pathogen due to its inherent hardiness and ability to develop antibiotic resistance.<sup>2,4</sup> Its large open pan-genome allows for horizontal gene transfer between other pathogenic and non-pathogenic bacteria to adapt to changing environments.<sup>2,5</sup> 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.<sup>2,5,6</sup> Two other virulence genes, hyl and acm, have been identified.<sup>2</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:

NR-31913 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 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<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 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: Enterococcus faecium, Strain E0045, NR-31913."

#### 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 \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

#### 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](http://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:

1. Gilmore, M. S., 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. Homan, W. L., et al. "Multilocus Sequence Typing Scheme for *Enterococcus faecium*." J. Clin. Microbiol. 40 (2002): 1963-1971. PubMed: 12037049.

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

