Product Information Sheet for NR-28978

Enterococcus faecium, Strain E1071

Catalog No. NR-28978

For research use only. Not for use in humans.

Contributor:
Willem van Schaik, Department of Medical Microbiology, University Medical Center Utrecht, Utrecht, the Netherlands

Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Enterococcaceae, Enterococcus*
Species: *Enterococcus faecium*
Strain: E1071
Original Source: *Enterococcus faecium* (*E. faecium*), strain E1071 is a non-infectious fecal isolate collected from a hospitalized person free of enterococcal infection in the Netherlands in 2000 during a hospital surveillance program.[1]
Comments: *E. faecium*, strain E1071 contains an 8-kb transposon insertion that inactivates the virulent *acm* gene; the insertion is flanked by a 54-base pairs direct repeat.[1] *E. faecium*, strain E1071 lacks the *hyl* and *acm* genes.[1] *E. faecium*, strain E1071 is resistant to vancomycin and carries an A2-type *vanA* transposon with a mutation insert at the left end that results in the deletion of the first 120 base pairs.[1] Genome analysis of strain E1071 suggests a possible porcine origin due to the presence of the *tcr* gene cluster, which confers resistance to copper, a common supplement in pig feed, and the (T) nucleotide at position 8234 of the *vanA* transposon.[1] *E. faecium*, strain E1071 is classified as DNA sequence type 32 based on multi-locus sequence typing of seven housekeeping genes. The complete genome of *E. faecium*, strain E1071 has been sequenced (GenBank: ABQI00000000).

E. faecium is a Gram-positive, facultative anaerobic coccus that is a commensal inhabitant of the gastrointestinal tract of both humans and animals.[1,2,3] *E. faecium* is an emerging and challenging nosocomial pathogen due to its inherent hardiness and ability to develop antibiotic resistance.[1,3] 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.[1,4] The large majority of strains isolated from nosocomial infections have been classified as Clonal Complex 17 (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.[1,4,5] Two other virulence genes, *hyl* and *acm*, have been identified.[1]

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-28978 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: 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 the 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 E1071, NR-28978."

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.

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. 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.
2. 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.
3. Arias, C. A. and B. E. Murray. "The Rise of the *Enterococcus*: Beyond Vancomycin Resistance." Nat. Rev. Microbiol. 10 (2012): 266-278. PubMed: 22421879.
4. Heikens, E., et al. "Identification of a Novel Genomic Island Specific to Hospital-Acquired Clonal Complex 17 *Enterococcus faecium* Isolates." Apl. Environ. Microbiol. 74 (2008): 7094-7097. PubMed: 18836023.
5. 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.

Support Provided by NIAID

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898