

Escherichia coli, Strain E3046

Catalog No. NR-22048

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: Enterobacteriaceae, Escherichia

Species: Escherichia coli

Strain: E3046

Serotype: O157:H7¹

Original Source: Escherichia coli (E. coli), strain E3046 was isolated in 1995 from cattle feces in Washington, USA.^{1,2}

Comments: E. coli, strain E3046 is an enterohemorrhagic E. coli (EHEC) and contains both the Shiga-like type 1 toxin (Stx1) and the Shiga-like type 2 toxin (Stx2).¹ It was deposited as belonging to the clinical genotypes (CG) as a Stx-encoding bacteriophage insertion (SBI) genotype 3.^{1,2}

E. coli is a Gram-negative, rod-shaped bacterium commonly found in the gut flora of warm-blooded animals and is the primary facultative anaerobe of the human gastrointestinal tract. While most E. coli strains are harmless and are an important part of a healthy intestinal tract, some serotypes are pathogenic, causing diarrhea, urinary tract infections, respiratory illness, pneumonia, or other illnesses in their host.³⁻⁵ Pathogenic E. coli may be transmitted through contaminated food or water, or through contact with infected persons or animals. The six pathotypes associated with diarrhea and collectively referred to as diarrheagenic E. coli are: Shiga toxin-producing E. coli [STEC; also referred to as Verocytotoxin-producing E. coli (VTEC) or enterohemorrhagic E. coli (EHEC)]⁶, enterotoxigenic E. coli (ETEC)⁷, enteropathogenic E. coli (EPEC)⁸, enteroaggregative E. coli (EAEC)⁹, enteroinvasive E. coli (EIEC) and diffusely adherent E. coli (DAEC).¹⁰

Many EHEC strains encode potent toxins, similar to those of Shigella dysenteriae, which can cause severe intestinal, kidney, and central nervous system disease.³ E. coli O157:H7 is the most common EHEC serotype contributing to more than 75,000 human infections and 17 outbreaks per year.¹¹

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-22048 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 Nutrient broth or equivalent

Tryptic Soy agar or Nutrient agar or Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic

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: Escherichia coli, Strain E3046, NR-22048."

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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