

***Escherichia coli*, Strain MDL 4445**

Catalog No. NR-4389

For research use only. Not for human use.

Contributor:

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Product Description:

Bacteria Classification: *Enterobacteriaceae, Escherichia*

Species: *Escherichia coli*

Strain: MDL 4445

Serotype: O157:H7

Original Source: Human clinical sample isolated at Mercy
Medical Center, California in August 2006, due to an
outbreak linked to spinach consumption

Escherichia coli (*E. coli*) is a Gram-negative, rod-shaped bacterium which occurs singly or in pairs. It is a major facultative inhabitant of the large intestine. Many enterohemorrhagic *E. coli* (EHEC) strains encode potent toxins, similar to those of *Shigella dysenteriae*, which can cause severe intestinal, kidney and central nervous system disease.

E. coli, strain MDL 4445 is known to react with the O157 antigen and thus, it is probable that it carries the pO157 plasmid. Additionally, this strain may carry the genes for hemolysin A (*hlyA*), Shiga toxin 2 (*stx2*) and intimin (*eaeA*) that are found in most enterohemorrhagic *E. coli* (EHEC) strains.¹

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol.

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

Packaging/Storage:

NR-4389 was packaged aseptically, in screw-capped plastic cryovials. The product is provided frozen and should be stored at -70°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 equivalent

Tryptic Soy Agar or equivalent

Incubation:

Temperature: 35–37°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 Tryptic Soy Broth.
3. Use several drops of the suspension to inoculate a Tryptic Soy Agar slant and/or plate.
4. Incubate the slant and/or plate at 35–37°C for 24 hours.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Escherichia coli*, Strain MDL 4445, NR-4389.”

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, 2007; see www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm.

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References:

1. Escobar-Páramo, P., et al. "A Specific Genetic Background Is Required for Acquisition and Expression of Virulence Factors in *Escherichia coli*." Mol. Biol. Evol. 21 (2004): 1085–1094. PubMed: 15014151.
2. Jay, M. T., et al. "*Escherichia coli* O157:H7 in Feral Swine near Spinach Fields and Cattle, Central California Coast." Emerg. Infect. Dis. 13 (2007): 1908–1911.
3. Riley, L. W., et al. "Hemorrhagic Colitis Associated with a Rare *Escherichia coli* Serotype." N. Engl. J. Med. 308 (1983): 681–685. PubMed: 6338386.

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