

Escherichia coli, Strain F10018-41

Catalog No. NR-17676

For research use only. Not for human use.

Contributor:

C. DebRoy, Director, *E. coli* Reference Center, Department of Veterinary and Biomedical Sciences, College of Agricultural Sciences, The Pennsylvania State University, University Park, Pennsylvania, USA

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterobacteriaceae, Escherichia*

Species: *Escherichia coli*

Strain: F10018-41

Serotype: O18ab:K-:H14^{1,2}

Original Source: *Escherichia coli* (*E. coli*), strain F10018-41 was isolated from the feces of a healthy human.³

Comments: Strain F10018-41 is used as a reference strain for O18 serotyping.³ *E. coli*, strain F10018-41 was selected to undergo complete genome sequencing at the [J. Craig Venter Institute](#).

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.⁴⁻⁶ 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)]⁷, enterotoxigenic *E. coli* (ETEC)⁸, enteropathogenic *E. coli* (EPEC)⁹, enteroaggregative *E. coli* (EAEC)¹⁰, enteroinvasive *E. coli* (EIEC) and diffusely adherent *E. coli* (DAEC).¹¹

The absence of chromosomal virulence markers *stx1* and *stx2* in NR-17632 has been confirmed by PCR amplification of extracted DNA.

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-17676 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, Nutrient broth or equivalent

Tryptic Soy agar, 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 24 hours.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Escherichia coli*, Strain F10018-41, NR-17676."

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.

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. DebRoy, C., Personal Communication.
2. Kapur, V., et al. "Genome Sequencing and Analysis of Pathogenic *Escherichia coli* Strains." [J. Craig Venter Institute](http://j.craigventer.org/docs/STEC_White_Paper.pdf). (2009) <http://j.craigventer.org/docs/STEC_White_Paper.pdf>
3. [Statens Serum Institute](http://www.statensseruminstitut.dk)
4. Nataro, J. P. and J. B. Kaper. "Diarrheagenic *Escherichia coli*." *Clin. Microbiol. Rev.* 11 (1998): 142-201. PubMed: 9457432.
5. Kaper, J. B., J. P. Nataro and H. L. Mobley. "Pathogenic *Escherichia coli*." *Nat. Rev. Microbiol.* 2 (2004): 123-140. PubMed: 15040260.
6. Croxen, M. A., et al. "Recent Advances in Understanding Enteric Pathogenic *Escherichia coli*." *Clin. Microbiol. Rev.* 26 (2013): 822-880. PubMed: 24092857.
7. Smith, J. L., P. M. Fratamico and N. W. Gunther, 4th. "Shiga Toxin-Producing *Escherichia coli*." *Adv. Appl. Microbiol.* 86 (2014): 145-197. PubMed: 24377855.
8. Zhang, W. and D. A. Sack. "Progress and Hurdles in the Development of Vaccines against Enterotoxigenic *Escherichia coli* in Humans." *Expert Rev. Vaccines* 11 (2012): 677-694. PubMed: 22873126.
9. Ochoa, T. J. and C. A. Contreras. "Enteropathogenic *Escherichia coli* Infection in Children." *Curr. Opin. Infect. Dis.* 24 (2011): 478-483. PubMed: 21857511.
10. Estrada-Garcia, T. and F. Navarro-Garcia. "Enterotoxigenic *Escherichia coli* Pathotype: A Genetically Heterogeneous Emerging Foodborne Enteropathogen." *FEMS Immunol. Med. Microbiol.* 66 (2012): 281-298. PubMed: 22775224.
11. Smith, E. J., et al. "Pathogenesis of Adherent-Invasive *Escherichia coli*." *Future Microbiol.* 8 (2013): 1289-1300. PubMed: 24059919.
12. Bielaszewska, M., et al. "Shiga Toxin, Cytolethal Distending Toxin, and Hemolysin Repertoires in Clinical *Escherichia coli* O91 Isolates." *J. Clin. Microbiol.* 47 (2009): 2061-2066. PubMed: 19403777.
13. Beutin, L., et al. "Genetical and Functional Investigation of *fliC* Genes Encoding Flagellar Serotype H4 in Wildtype Strains of *Escherichia coli* and in a Laboratory *E. coli* K-12 Strain Expressing Flagellar Antigen Type H48." *BMC Microbiol.* 5 (2005): 4. PubMed: 15663798.

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

