

***Escherichia coli*, Strain 1885-77**

**Catalog No. NR-100**

(Derived from ATCC® 43892™)

**For research only. Not for human use.**

**Contributor:**

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**Product Description:**

Bacteria Classification: *Enterobacteriaceae*, *Escherichia*

Species: *Escherichia coli* (*E. coli*)

Strain: 1885-77 (EDL 1282)

Serotype: O29:NM

Original Source:<sup>1</sup> Isolated from human stool in 1977

Comment: *E. coli*, strain 1885-77 was deposited at ATCC® in 1988 by Dr. Nancy A. Strockbine, Enteric Bacteriology Section, Centers for Disease Control and Prevention, Atlanta, Georgia.

A high-molecular-weight plasmid and a positive Serény test have been associated with enteroinvasive *E. coli* (EIEC) strains.<sup>2</sup> EIEC strains invade and multiply within intestinal epithelial cells, resulting in a dysentery-like enteritis in humans, similar to that caused by *Shigella* species. EIEC pathogenesis requires the expression of genes present both on the chromosome and on a large invasion plasmid, pINV (220,000 bp).<sup>3,4</sup> The plasmid shares a significant degree of DNA homology with the virulence plasmid described in *Shigella* species, and is structurally and functionally equivalent.<sup>3,4</sup>

The presence of pINV has been confirmed by PCR amplification of the marker sequence *invE* from extracted DNA.

**Material Provided:**

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

**Packaging/Storage:**

NR-100 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 equivalent

Tryptic Soy Agar 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 Tryptic Soy Broth.
3. Use several drops of the suspension to inoculate a Tryptic Soy Agar slant and/or plate.
4. Incubate the tubes and plate at 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 1885-77, NR-100.”

**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](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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**References:**

1. Toledo, M. R., et al. "Invasive Strain of *Escherichia coli* Belonging to O Group 29." J. Clin. Microbiol. 9 (1979): 288–289. PubMed: 372230.
2. Harris, J. R., I. K. Wachsmuth, B. R. Davis, and M. L. Cohen. "High-Molecular-Weight Plasmid Correlates with *Escherichia coli* Enteroinvasiveness." Infect. Immun. 37 (1982): 1295–1298. PubMed: 6752026.
3. Hsia, R.-C., P. L. C. Small, and P. M. Bavoil. "Characterization of Virulence Genes of Enteroinvasive *Escherichia coli* by *TnphoA* Mutagenesis: Identification of *invX*, a Gene Required for Entry into HEP-2 Cells." J. Bacteriol. 175 (1993): 4817–4823. PubMed: 8393007.
4. Lan, R., et al. "Molecular Evolutionary Relationships of Enteroinvasive *Escherichia coli* and *Shigella* spp." Infect. Immun. 72 (2004): 5080–5088. PubMed: 15322001.

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