

## *Escherichia coli*, Strain D9

### Catalog No. HM-87

**For research use only. Not for use in humans.**

#### Contributor:

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#### Manufacturer:

BEI Resources

#### Product Description:

**Bacteria Classification:** *Enterobacteriaceae*, *Escherichia*

**Species:** *Escherichia coli* (deposited as *Shigella* sp., however this organism has been reclassified as *Escherichia coli*)

**Strain:** D9 (also referred to as strain 36\_3\_1A)<sup>1</sup>

**Original Source:** *Escherichia coli* (*E. coli*), strain D9 was isolated in 2007 from normal biopsy tissue taken from the cecum of a 59-year-old male patient undergoing a colon cancer screen in Calgary, Alberta, Canada.<sup>1,2</sup>

**Comments:** *E. coli*, strain D9 ([HMP ID 0760](#)) is a reference genome for [The Human Microbiome Project](#) (HMP). HMP is an initiative to identify and characterize human microbial flora. The complete genome of *E. coli*, strain D9 was sequenced at the Broad Institute (GenBank: [ACDL00000000](#)).

**Note:** HMP material is taxonomically classified by the depositor. Quality control of these materials is only performed to demonstrate that the material distributed by BEI Resources is identical to the deposited material.

*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.<sup>3,4,5</sup> 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)]<sup>6</sup>, enterotoxigenic *E. coli* (ETEC)<sup>7</sup>, enteropathogenic *E. coli* (EPEC)<sup>8</sup>, enteroaggregative *E. coli* (EAEC)<sup>9</sup>, enteroinvasive *E. coli* (EIEC) and diffusely adherent *E. coli* (DAEC).<sup>10</sup>

#### 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:

HM-87 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 equivalent

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 as part of the Human Microbiome Project: *Escherichia coli*, Strain D9 (Deposited as *Shigella* sp., Strain D9), HM-87."

#### 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.

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**References:**

1. Allen-Vercoe, E., Personal Communication.
2. [HMP ID 0760](#) (*Escherichia coli*, strain D9)
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4. Kaper, J. B., J. P. Nataro and H. L. Mobley. "Pathogenic *Escherichia coli*." *Nat. Rev. Microbiol.* 2 (2004): 123-140. PubMed: 15040260.
5. Croxen, M. A., et al. "Recent Advances in Understanding Enteric Pathogenic *Escherichia coli*." *Clin. Microbiol. Rev.* 26 (2013): 822-880. PubMed: 24092857.
6. 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.
7. 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.
8. Ochoa, T. J. and C. A. Contreras. "Enteropathogenic *Escherichia coli* Infection in Children." *Curr. Opin. Infect. Dis.* 24 (2011): 478-483. PubMed: 21857511.
9. 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.
10. Smith, E. J., et al. "Pathogenesis of Adherent-Invasive *Escherichia coli*." *Future Microbiol.* 8 (2013): 1289-1300. PubMed: 24059919.

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