

***Escherichia coli*, Strain AGT01**

Catalog No. NR-50499

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterobacteriaceae, Escherichia*

Species: *Escherichia coli*

Strain: AGT01

Serotype: O127:H6

Original Source: *Escherichia coli* (*E. coli*), strain AGT01 is a flagellin (*fliC*) insertion mutant of the wild type strain E2348/69.¹ Strain E2348/69 was isolated in 1969 during an outbreak of diarrhea in an infant nursery in Taunton, England.²⁻⁴

Comments: Mutagenesis occurred through the insertion of a chloramphenicol-resistance gene (*cat*) into *fliC*.¹ *fliC* encodes for the flagellar filament structural protein, FliC which is required for flagella formation and may be involved in adhesion of the bacterium to the host cell.¹

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. There are a number of pathogenic types of *E. coli* associated with diarrhea that are referred to as: enterohemorrhagic *E. coli* (EHEC) [also known as Shiga toxin-producing *E. coli* (STEC) or Verocytotoxin-producing *E. coli* (VTEC)]⁵, enterotoxigenic *E. coli* (ETEC)⁶, enteropathogenic *E. coli* (EPEC)⁷, enteroaggregative *E. coli* (EAEC)⁸, enteroinvasive *E. coli* (EIEC) and diffusely adherent *E. coli* (DAEC).⁹

Characteristic features of EPEC strains are induction of attaching and effacing (A/E) lesions on intestinal epithelial cells, lack of enterotoxins and lack of shigella-like invasiveness. The ability to induce A/E lesions is encoded by genes located on a 35-kb pathogenicity island (PAI) called the locus of enterocyte effacement (LEE), which contains the genes encoding *eae* (intimin), a type III secretion system, a number of secreted proteins (ESP), and the translocated intimin receptor (Tir).⁷

EPEC strain E2348/69 (serotype O127:H6) has been used worldwide as a prototype strain to study EPEC biology, genetics, and virulence. The complete genome sequence of strain E2348/69 (GenBank: [NC_011601](https://www.ncbi.nlm.nih.gov/nuccore/NC_011601)) has enabled analysis of over 400 known/predicted effector sequences and identified only 21 putative effectors, providing a clear picture of the core LEE and non-LEE effector genes.³

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-50499 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 provided by Dr. Kaper, for distribution by BEI Resources, NIAID, NIH: *Escherichia coli*, Strain AGT01, NR-50499.”

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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References:

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5. Smith, J. L., P. M. Fratamico and N. W. Gunther IV. "Shiga Toxin-Producing *Escherichia coli*." Adv. Appl. Microbiol. 86 (2014): 145-197. PubMed: 24377855.
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