

### ***Escherichia coli*, Strain B171**

**Catalog No. NR-9296**

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

#### **Contributor:**

James B. Kaper, Center for Vaccine Development,  
Department of Microbiology and Immunology, University of  
Maryland, School of Medicine, Baltimore, Maryland.

#### **Product Description:**

Bacteria Classification: *Enterobacteriaceae*, *Escherichia*

Species: *Escherichia coli*

Strain: B171

Serotype: O111:NM<sup>1</sup>

Original Source: *Escherichia coli* (*E. coli*), strain B171, is an  
enteropathogenic *E. coli* (EPEC) that was isolated from a  
child with diarrhea in Seattle, Washington, 1983.<sup>1,2</sup>

Comment: Genome and pB171 sequence information is  
available at [Escherichia coli, strain B171 Project at TIGR](#).

*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.

EPEC strains cause diarrheal outbreaks and chronic  
diarrhea, especially in infants. EPEC pathogenesis requires  
the expression of genes present both on the chromosome  
and on an adherence factor plasmid, pB171 (also referred to  
as EAF).<sup>3</sup>

*E. coli*, strain B171 contains pB171, pYR111 and a small  
cryptic plasmid.<sup>1,4</sup> pYR111 harbors genes required for  
resistance to chloramphenicol, streptomycin, sulphathiazole  
and tetracycline and for the expression of the O-111  
polysaccharide.<sup>1</sup> pB171 contains a locus coding for the  
structural subunit of the bundle-forming pilus which is  
required for the localized adherence phenotype.<sup>3</sup>

#### **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 purify prior to initiating work.

#### **Packaging/Storage:**

NR-9296 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  
broth.
3. Use several drops of the suspension to inoculate an  
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 B171, NR-9296."

#### **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/bmbl5/bmbl5toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.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](http://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 make 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. Riley, L. W., L. N. Junio and G. K. Schoolnik. "HeLa Cell Invasion by a Strain of Enteropathogenic *Escherichia coli* that Lacks the O-antigenic Polysaccharide." Mol. Microbiol. 4 (1990): 1661-1666. PubMed: 1706454.
2. Paulozzi, L. J., et al. "Diarrhea Associated with Adherent Enteropathogenic *Escherichia coli* in an Infant and Toddler Center, Seattle, Washington." Pediatrics 77 (1986): 296-300. PubMed: 3513114.
3. Tobe, T., et al. "Complete DNA Sequence and Structural Analysis of the Enteropathogenic *Escherichia coli* Adherence Factor Plasmid." Infect. Immun. 67 (1999): 5455-5462. PubMed: 10496929. GenBank: AB024946.
4. Puente, J. L., et al. "The Bundle-Forming Pili of Enteropathogenic *Escherichia coli*: Transcriptional Regulation by Environmental Signals." Mol. Microbiol. 20 (1996): 87-100. PubMed: 8861207.
5. Kaper, J. B., J. P. Nataro and H. L. Mobley. "Pathogenic *Escherichia coli*." Nat. Rev. Microbiol. 2 (2004): 123-140. PubMed: 15040260.

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

