

Genomic DNA from *Escherichia coli*, Strain H10407

Catalog No. NR-2647

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Contributor:
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Manufacturer:
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Product Description:

Genomic DNA was isolated from a preparation of *Escherichia coli* (*E. coli*), strain H10407, serotype O78:H11.

The enterotoxigenic *E. coli* (ETEC) strain H10407 was isolated from a patient with diarrhea in Bangladesh.¹ It produces at least two types of virulence factors: 1) colonization factor antigen I (CFA/I), which is responsible for adhesion of bacterial cells to intestinal epithelial cells, and 2) heat-labile (LT) and heat-stable (ST) enterotoxins which cause diarrhea.¹ *E. coli* strain H10407 carries three plasmid species: 1) pCS1 (CFA/I+ST+; 95,000 bp), 2) pJY11 (LT+ST+; 65,000 bp), and 3) pTRA1 (65,000 bp), a self-transmissible plasmid which mobilizes pCS1 and pJY11.¹ The gene for another heat-stable enterotoxin (EAST1) has been found in *E. coli* strain H10407, sequenced (GenBank: AB042004), and reported to have enterotoxin activity.^{2,3}

NR-2647 has been qualified for PCR applications by amplification of approximately 1500 base pairs of the 16S ribosomal RNA gene.

The presence of plasmids pCS1 and pJY11 has been confirmed by PCR amplification of plasmid and chromosomal virulence markers *esth* (pCS1), *estp* (pCS1) and *elt* (pJY11) *astA* (chromosomal).

Material Provided:

Each vial contains 0.7 to 1.5 µg of genomic DNA in TE buffer (10 mM Tris-HCl and 1 mM EDTA, pH ~ 8.0). Each vial of lot 5107284 contains approximately 5 µg of genomic DNA in TE buffer (10 mM Tris-HCl and 1 mM EDTA, pH ~ 7.4). The concentration is shown on the Certificate of Analysis. The vial should be centrifuged prior to opening.

Packaging/Storage:

NR-2647 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be minimized.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH:

Genomic DNA from *Escherichia coli*, Strain H10407, NR-2647."

Biosafety Level: 1

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/bmb15/index.htm.

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References:

1. Yamamoto, T. and T. Yokota. "Plasmids of Enterotoxigenic *Escherichia coli* H10407: Evidence for Two Heat-Stable Enterotoxin Genes and a Conjugal Transfer System." J. Bacteriol. 153 (1983): 1352–1360. PubMed: 6298182.
2. Yamamoto, T. and P. Echeverria. "Detection of the Enterotoxigenic *Escherichia coli* Heat-stable

Enterotoxin 1 Gene Sequences in Enterotoxigenic *E. coli* Strains Pathogenic for Humans." Infect. Immun. 64 (1996): 1441–1445. PubMed: 8606115. GenBank: AB042004.

3. McVeigh, A., et al. "IS1414, an *Escherichia coli* Insertion Sequence with a Heat-Stable Enterotoxin Gene Embedded in a Transposase-Like Gene." Infect. Immun. 68 (2000): 5710–5715. PubMed: 10992475.

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