

Genomic DNA from *Escherichia coli*, Strain RIMD 0509952

Catalog No. NR-2649

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Product Description:

Genomic DNA was isolated from a preparation of *Escherichia coli* (*E. coli*), strain RIMD 0509952, serotype O157:H7. The bacterial preparation was produced by propagation of BEI Resources NR-12.

The enterohemorrhagic *E. coli* (EHEC) strain RIMD 0509952 was isolated from a patient during an outbreak of hemorrhagic colitis and hemolytic uremic syndrome in Sakai City, Osaka Prefecture, Japan.¹ *E. coli* RIMD 0509952 and many other EHEC strains encode potent toxins, similar to those of *Shigella dysenteriae*, which can cause severe intestinal, kidney and central nervous system disease. *E. coli* RIMD 0509952 carries two plasmid species: 1) pO157 (92,721 bp) and 2) pOSAK1 (3,306 bp).² Virulence-associated genes are located on both the chromosome and pO157. The complete sequence of the chromosome (5,498,450 bp; GenBank: NC_002695), pO157 (GenBank: NC_002128) and pOSAK1 (GenBank: NC_002127) from *E. coli* strain RIMD 0509952 have been determined.^{2,3}

NR-2649 has been qualified for PCR applications by amplification of ~ 1500 bp of the 16S ribosomal RNA gene as well as three virulence markers on the chromosome. The presence of plasmid pO157 has been confirmed by PCR amplification of a ~ 3200 bp sequence.

Material Provided:

Each vial contains 4–6 µg of bacterial genomic DNA in TE buffer (10 mM Tris-HCl, 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-2649 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 the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Genomic DNA from *Escherichia coli*, Strain

RIMD 0509952, NR-2649.”

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. 4th ed. Washington, DC: U.S. Government Printing Office, 1999. HHS Publication No. (CDC) 93-8395. This text is available online at www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm.

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References:

1. Watanabe, H., et al. “Outbreaks of Enterohaemorrhagic *Escherichia coli* O157:H7 Infection by Two Different Genotype Strains in Japan, 1996.” Lancet 348 (1996): 831–832. PubMed: 8814014.
2. Makino, K., et al. “Complete Nucleotide Sequences of 93-kb and 3.3-kb Plasmids of an Enterohemorrhagic *Escherichia coli* O157:H7 Derived from Sakai

- Outbreak." DNA Res. 5 (1998): 1–9. PubMed: 9628576. GenBank: NC_002128 and NC_002127.
3. Hayashi, T., et al. "Complete Genome Sequence of Enterohemorrhagic *Escherichia coli* O157:H7 and Genomic Comparison with a Laboratory Strain K-12." DNA Res. 8 (2001): 11–22. PubMed: 11258796. GenBank: NC_002695.

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