Product Information Sheet for NR-101

Escherichia coli, Strain NCDC 909-51

Catalog No. NR-101
(Derived from ATCC® 23520™)

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Contributor:
ATCC®

Product Description:
Bacteria Classification: *Enterobacteriaceae, Escherichia*
Agent: *Escherichia coli (E. coli)*
Strain: NCDC 909-51
Serotype: O28a,28c:K73(B18):NM
Original Source:[1] Human feces
Comment: *Escherichia coli*, strain NCDC 909-51 was deposited at ATCC® in 1967 by the National Communicable Disease Center, Atlanta, Georgia.

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.

The enteroinvasive *E. coli* (EIEC) strain NCDC 909-51 was isolated from the feces of a patient in Katwijk, The Netherlands around 1940.[1] EIEC strains invade and multiply within intestinal epithelial cells, resulting in a dysentery-like enteritis in humans, similar to that caused by *Shigella* species. EIEC pathogenesis requires the expression of genes present both on the chromosome and on a large invasion plasmid, pINV (220,000 bp).[2,3] The plasmid shares a significant degree of DNA homology with the virulence plasmid described in *Shigella* species, and is structurally and functionally equivalent.[2,3]

Material Provided:
Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol.

Packaging/Storage:
NR-101 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 Tryptic Soy Broth.
3. Use several drops of the suspension to inoculate a Tryptic Soy Agar slant and/or plate.
4. Incubate the slant and/or 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 NCDC 909-51, NR-101."

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. 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. Ned. Tijdschr. Geneeskd. 84 (1940): 4613–4621.
2. Hsia, R.-C., P. L. C. Small, and P. M. Bavoil. "Characterization of Virulence Genes of Enteroinvasive *Escherichia coli* by Tn*phoA* Mutagenesis: Identification of *invX*, a Gene Required for Entry into HEp-2 Cells." J. Bacteriol. 175 (1993): 4817–4823. PubMed: 8393007.
3. Lan, R., et al. "Molecular Evolutionary Relationships of Enteroinvasive *Escherichia coli* and *Shigella* spp." Infect. Immun. 72 (2004): 5080–5088. PubMed: 15322001.

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