Product Information Sheet for NR-28787

Salmonella enterica subsp. *enterica*, Strain SL317 (E2002001708) (Serovar Newport)

Catalog No. NR-28787

For research use only. Not for human use.

Contributor:

Mark K. Mammel, Microbiologist, Division of Molecular Biology, Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition, United States Food and Drug Administration, Laurel, Maryland, USA

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterobacteriaceae*, *Salmonella*
Species: *Salmonella enterica*
Subspecies: *Salmonella enterica* subsp. *enterica*
Serovar: Newport
Strain: SL317 (also referred to as strain E2002001708)[1,2]
Original Source: *Salmonella enterica* (*S. enterica*) subsp. *enterica*, strain SL317 (E2002001708) was isolated in 2002 from a human stool in Minnesota, USA.[1,2]
Comments: Strain SL317 (E2002001708) is reported to be an antibiotic-susceptible strain.[1] The complete genome for *S. enterica* subsp. *enterica*, strain SL317 (E2002001708) was sequenced at the J. Craig Venter Institute (GenBank: ABEW00000000).[2]

S. enterica are Gram-negative, rod-shaped, flagellated bacteria. The species is divided into six subspecies (I, II, IIIa, IIIb, IV, VI) where only subspecies I, subsp. *enterica*, is considered of clinical relevance.[3] Salmonellosis (non-typhoidal), due to the greater than 1500 serovars of *S. enterica* subsp. *enterica*, is one of the most common food-borne diseases with approximately 1 million cases that occur in the United States every year.[4] Pathogenicity results from a variety of virulence factors found in plasmids, prophages, and five pathogenicity islands which allow these organisms to colonize and infect host organisms.[5,6]

S. enterica subsp. *enterica* serovar Newport (formerly *Salmonella Newport*) is prevalent in many geographic regions and has ranked in the top three *Salmonella* serotypes associated with foodborne outbreaks from 1995 to 2011 in the U.S. It is responsible for several major outbreaks involving tomatoes, ground beef, alfalfa sprouts, and other foods since 2002.[7] Dairy cattle have been identified as the main reservoir and antimicrobial resistance is particularly problematic in many serovar Newport strains.[8] At least three distinct evolutionary lineages exist in this serotype.[7,9]

The complete genome sequence of several strains of *S. enterica* subsp. *enterica* serovar Newport have been completed.[7,10,11]

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Nutrient broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-28787 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 with 5% defibrinated sheep blood or Nutrient 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 tube, slant and/or plate at 37°C for 24 hours.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Salmonella enterica* subsp. *enterica*, Strain SL317 (E2002001708) (Serovar Newport), NR-28787."

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.

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.

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 makes any warranties or representations as to its accuracy. Citations

from scientific literature and patents are provided for informational purposes only. Neither the 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. Fricke, W. F., et al. "Comparative Genomics of 28 *Salmonella enterica* Isolates: Evidence for CRISPR-Mediated Adaptive Sublineage Evolution." J. Bacteriol. 193 (2011): 3556-3568. PubMed: 21602358.
2. Dr. M. K. Mammel, personal communication
3. Grimont, P. A. D. and F.-X. Weill. Antigenic Formulae of the *Salmonella* Serovars, 2007, 9th edition. Paris: WHO Collaborating Centre for Reference and Research on *Salmonella*, Pasteur Institute.
4. Scallan, E., et al. "Foodborne Illness Acquired in the United States – Major Pathogens." Emerg. Infect. Dis. 17 (2011): 7-15. PubMed: 21192848.
5. Lavigne, J. P. and A. B. Blanc-Potard. "Molecular Evolution of *Salmonella enterica* Serovar Typhimurium and Pathogenic *Escherichia coli*: From Pathogenesis to Therapeutics." Infect. Genet. Evol. 8 (2008): 217-226. PubMed: 18226587.
6. Parsons, D. A. and F. Heffron. "*sciS*, an *icmF* Homolog in *Salmonella enterica* Serovar Typhimurium, Limits Intracellular Replication and Decreases Virulence." Infect. Immun. 73 (2005): 4338-4345. PubMed: 15972528.
7. Cao, G., et al. "Phylogenetics and Differentiation of *Salmonella* Newport Lineages by Whole Genome Sequencing." PLoS One 8 (2013): e55687. PubMed: 23409020.
8. Berge, A. C. B., J. M. Adaska and W. M. Sischo. "Use of Antibiotic Susceptibility Patterns and Pulsed-Field Gel Electrophoresis to Compare Historic and Contemporary Isolates of Multi-Drug-Resistant *Salmonella enterica* subsp. *enterica* Serovar Newport." Appl. Environ. Microbiol. 70 (2004): 318-323. PubMed: 14711658.
9. Sangal, V., et al. "Evolution and Population Structure of *Salmonella enterica* Serovar Newport." J. Bacteriol. 192 (2010): 6465-6476. PubMed: 20935094.
10. Zhang, J., et al. "Whole-Genome Sequences of Four *Salmonella enterica* Serotype Newport Strains from Humans." Genome Announc. 1 (2013): e00213-13. PubMed: 23661485.
11. Cao, G., et al. "Draft Genome Sequences of Eight *Salmonella enterica* Serotype Newport Strains from Diverse Hosts and Locations." J. Bacteriol. 194 (2012): 5146. PubMed: 22933769.
12. Jacobsen, A., et al. "The *Salmonella enterica* Pan-genome." Microb. Ecol. 62 (2011): 487-504. PubMed: 21643699.
13. Yue, M., et al. "Diversification of the *Salmonella* Fimbriae: A Model of Macro- and Microevolution." PLoS One 7 (2012): e38596. PubMed: 22701679.
14. Shariat, N., et al. "Subtyping of *Salmonella enterica* Serovar Newport Outbreak Isolates by CRISPR-MVLST and Determination of the Relationship between CRISPR-MVLST and PFGE Results." J. Clin. Microbiol. 51 (2013): 2328-2336. PubMed: 23678062.

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

Support Provided by NIAID

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898