

Product Information Sheet for NR-22067

***Salmonella enterica* subsp. *enterica*, Strain S10801 (Serovar Typhimurium)**

Catalog No. NR-22067

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterobacteriaceae*, *Salmonella*

Species: *Salmonella enterica*

Subspecies: *Salmonella enterica* subsp. *enterica*

Serovar: Typhimurium

Strain: S10801

Original Source: *Salmonella enterica* (*S. enterica*) subsp. *enterica*, strain S10801 was isolated in 2005 from a mesenteric lymph node of a calf with sepsis in Washington State, USA.¹

Comments: Strain S10801 was deposited as a multi-drug resistant strain of *S. enterica* subsp. *enterica*. This strain is reported to be resistant to ampicillin, chloramphenicol, triple sulfa, streptomycin, tetracycline and nalidixic acid.¹

S. enterica subsp. *enterica* is a Gram-negative, rod-shaped, flagellated bacterium. The species is divided into six subspecies (I, II, IIIa, IIIb, IV, VI) where only subspecies I, subsp. *enterica*, is considered of clinical relevance. 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 an estimated 2 million cases that occur in the United States every year.² 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.^{3,4}

S. enterica subsp. *enterica* serovar Typhimurium (formerly *Salmonella typhimurium*) is a major cause of gastroenteritis. These bacteria are host generalists that occur in humans and many other mammals. Septic shock resulting in part from lipopolysaccharide (LPS) is a primary complication associated with serovar Typhimurium infection.⁵ Due to its similarity to the clinical and pathological effects in humans, calves are currently used as an animal model for human enterocolitis caused by this serotype.⁶ Additionally, this serovar causes typhoid-like disease in mice and is used as a mouse model of human typhoid fever.⁷

The complete genome sequence of several strains of *S. enterica* subsp. *enterica* serovar Typhimurium are in progress

[strain DT104 (Definitive Type 104; a multidrug resistant strain), strain SL1344 (a genetically marked subline of a calf-virulent isolate), and strain TR7095 (a wild-type strain)] and strain LT2 has been completed (GenBank: [AE006468](#)).⁷

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-22067 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 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 S10801 (Serovar Typhimurium), NR-22067."

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:

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References:

1. Daniels, J. B., et al. "Role of Ceftiofur in Selection and Dissemination of *bla*_{CMY-2}-Mediated Cephalosporin Resistance in *Salmonella enterica* and Commensal *Escherichia coli* Isolates from Cattle." Appl. Environ. Microbiol. 75 (2009): 3648-3655. PubMed: 19376926.
2. Altekruze, S. F., M. L. Cohen and D. L. Swerdlow. "Emerging Foodborne Diseases." Emerg. Infect. Dis. 3 (1997): 285-293. PubMed: 9284372.
3. 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.
4. 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.
5. Sha, J., et al. "The Two Murein Lipoproteins of *Salmonella enterica* Serovar Typhimurium Contribute to the Virulence of the Organism." Infect. Immun. 72 (2004): 3987-4003. PubMed: 15213144.
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7. McClelland, M., et al. "Complete Genome Sequence of *Salmonella enterica* Serovar Typhimurium LT2." Nature 413 (2001): 852-856. PubMed: 11677609. GenBank: AE006468.
8. Davis, M. A., et al. "Multidrug-Resistant *Salmonella* Typhimurium, Pacific Northwest, United States." Emerg. Infect. Dis. 13 (2007): 1583-1586. PubMed: 18258014.

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