

***Salmonella enterica* subsp. *enterica*, Strain LS1054**

Catalog No. NR-4346

For research use only. Not for human use.

Contributor:

National Institute of Allergy and Infectious Diseases, National Institutes of Health

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Enterobacteriaceae*, *Salmonella*

Species: *Salmonella enterica*

Subspecies: *Salmonella enterica* subsp. *enterica*^{1,2}

Serogroup: B

Serovar: Typhimurium

Strain: LS1054

Original Source: *Salmonella enterica* (*S. enterica*) subsp. *enterica*, strain LS1054 is a derivative of strain 14028.³ Strain 14028 (also referred to as CDC 6516-60) was isolated from chickens and deposited to the ATCC® in 1960.

Comments: *S. enterica* subsp. *enterica*, strain LS1054 expresses STM3118, tagged with 3 X FLAG epitopes.³ STM3118 is proposed to function as an acetyl-CoA hydrolase (Ach) producing acetate, which is commonly used to modify the peptidoglycan layer of the bacterial cell wall to protect bacteria from peptidoglycan degradation enzymes found in macrophages.³ Additional information is available at the [Resource Center for Biodefense Proteomics Research \(BPRC\)](#).

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. 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.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 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.⁷ 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.⁸ Additionally, this serovar causes typhoid-like disease in mice and is used as a mouse model of

human typhoid fever.⁹

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).⁹

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-4346 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 tubes, slants or plates 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 LS1054, NR-4346."

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, 2007; see www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm.

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