Product Information Sheet for NR-13555

Salmonella enterica subsp. *enterica*, Strain A36

Catalog No. NR-13555

For research use only. Not for human use.

Contributor:
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Product Description:
Bacteria Classification: *Enterobacteriaceae*, *Salmonella*
Species: *Salmonella enterica*
Subspecies: *Salmonella enterica* subsp. *enterica*[1,2]
Serogroup: B
Serovar: Typhimurium
Strain: A36

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.[3] 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.[4,5]

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.[6] 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.[7] Additionally, this serovar causes typhoid-like disease in mice and is used as a mouse model of human typhoid fever.[8]

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).[8]

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-13555 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 LB Broth
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 and 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: *Salmonella enterica* subsp. *enterica*, Strain A36, NR-13555."

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/bmbl5/bmbl5toc.htm.

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References:

1. Judicial Commission of the International Committee on Systematics of Prokaryotes. "The Type Species of the Genus *Salmonella* Lignierres 1900 Is *Salmonella enterica* (*ex* Kauffmann and Edwards 1952) Le Minor and Popoff 1987, with the Type Strain LT2^T, and Conservation of the Epithet *enterica* in *Salmonella enterica* over All Earlier Epithets that May Be Applied to This Species. Opinion 80." Int. J. Syst. Evol. Microbiol. 55 (2005): 519-520. PubMed: 15653929.
2. Tindall, B. J., et al. "Nomenclature and Taxonomy of the Genus *Salmonella*." Int. J. Syst. Evol. Microbiol. 55 (2005): 521-524. PubMed: 15653930.
3. Altekruse, S. F., M. L. Cohen, and D. L. Swerdlow. "Emerging Foodborne Diseases." Emerg. Infect. Dis. 3 (1997): 285-293. PubMed: 9284372.
4. 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.
5. 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.
6. 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.
7. Zhang, S., et al. "The *Salmonella enterica* Serotype Typhimurium Effector Proteins SipA, SopA, SopB, SopD, and SopE2 Act in Concert to Induce Diarrhea in Calves." Infect. Immun. 70 (2002): 3843-3855. PubMed: 12065528.
8. McClelland, M., et al. "Complete Genome Sequence of *Salmonella enterica* Serovar Typhimurium LT2." Nature 413 (2001): 852-856. PubMed: 11677609. GenBank: AE006468.
9. Pelludat, C., S. Mirold, and W.-D. Hardt. "The SopEPhi Phage Integrates into the *ssrA* Gene of *Salmonella enterica* Serovar Typhimurium A36 and Is Closely Related to the Fels-2 Prophage." J. Bacteriol. 185 (2003): 5182-5191. PubMed: 12923091.
10. Prager, R., et al. "Molecular Properties of *Salmonella enterica* Serotype Paratyphi B Distinguish between Its Systemic and Its Enteric Pathovars." J. Clin. Microbiol. 41 (2003): 4270-4278. PubMed: 12958256.

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