

Listeria monocytogenes, Strain Li 22

Catalog No. NR-108

(Derived from ATCC® 19113™)

For research only. Not for human use.

Contributor:

ATCC®

Product Description:

Bacteria Classification: *Listeriaceae, Listeria*

Species: *Listeria monocytogenes*

Strain: Li 22 (N40; NCTC 5105)

Serotype: 3a

Original Source:¹ Human, Denmark (1937)

Comment: *Listeria monocytogenes* (*L. monocytogenes*), strain Li 22 was non-hemolytic at the time of deposition.

L. monocytogenes is a Gram-positive, facultative intracellular bacterium that is extremely tolerant of external stresses (pH 3-12, temperatures ranging from 1 to 45°C, and high salt). *L. monocytogenes* encompasses a diversity strains with varied virulence and pathogenic potential. There are 13 serotypes (1/2a, 1/2b, 1/2c, 3a, 3b, 3c, 4a, 4b, 4c, 4d, 4e, 5 and 7) that have been isolated from mammalian, bird, fish and shellfish species as well as environmental sources. Of these, only 3 serotypes (1/2a, 1/2b, and 4b) are frequently isolated from outbreaks of human listeriosis. The most common cause of infection is through ingestion of contaminated foods, in particular milk, meat or vegetable products. The infective dose is unknown and varies with species.²

Material Provided:

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

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

Packaging/Storage:

NR-108 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 Condition:

Media:

Brain Heart Infusion broth or equivalent

Brain Heart Infusion agar or Sheep Blood agar

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: *Listeria monocytogenes*, Strain Li 22, NR-108.”

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.

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 make any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither 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. Nyfeldt, A. "Klinische und Experimentelle Untersuchungen über die Mononukleosis Infectiosa." Folia Haematol. 47 (1937): 1-144.
2. Liu, D., et al. "Toward an Improved Laboratory Definition of *Listeria monocytogenes* Virulence." Int. J. Food Microbiol. 118 (2007): 101-115. PubMed: 17727992.
3. Hain, T., C. Steinweg, and T. Chakraborty. "Comparative and Functional Genomics of *Listeria* Spp." J. Biotechnol. 126 (2006): 37-51. PubMed: 16757050.
4. Tominaga, T. "Rapid Discrimination of *Listeria monocytogenes* Strains by Microtemperature Gradient Gel Electrophoresis." J. Clin. Microbiol. 44 (2006): 2199-2206. PubMed: 16757621.
5. Glaser, P., et al. "Comparative Genomics of *Listeria* Species." Science 294 (2001): 849-852. PubMed: 11679669.
6. Murray, E. G. D., Webb, R. A., and Schwann, M. B. R. "A Disease of Rabbits Characterized by a Large Mononuclear Leucocytosis, Caused by a Hitherto Undescribed Bacillus *Bacterium monocytogenes* (n. sp.)." J. Pathol. Bacteriol. 29 (1926): 407-439.
7. Paterson, J. S. "The Antigenic Structure of Organisms of the Genus *Listerella*." J. Pathol. Bacteriol. 51 (1940): 427-436.
8. Jaradat, Z. W. and A. K. Bhunia. "Adhesion, Invasion, and Translocation Characteristics of *Listeria monocytogenes* Serotypes in Caco-2 Cell and Mouse Models." Appl. Environ. Microbiol. 69 (2003): 3640-3645. PubMed: 12788773.
9. Liu, D., et al. "Characterization of Virulent and Avirulent *Listeria monocytogenes* Strains by PCR Amplification of Putative Transcriptional Regulator and Internalin Genes." J. Med. Microbiol. 52 (2003): 1065-1070. PubMed: 14614064.
10. Lammerding, A. M., et al. "Determination of Virulence of Different Strains of *Listeria monocytogenes* and *Listeria innocua* by Oral Inoculation of Pregnant Mice." Appl. Environ. Microbiol. 58 (1992): 3991-4000. PubMed: 1476441.
11. Kaufmann, S. H. E. "Acquired Resistance to Facultative Intracellular Bacteria: Relationship Between Persistence, Cross-Reactivity at the T-Cell Level, and Capacity to Stimulate Cellular Immunity of Different *Listeria* Strains." Infect. Immun. 45 (1984): 234-241. PubMed: 6610639.
12. Seeliger, H. P. R. Listeriosis. 2nd ed. Basel: Karger, 1961.

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

