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SUPPORTING INFECTIOUS DISEASE RESEARCH

Salmonella enterica subsp. enterica, Strain SL475 (CVM29188) (Serovar Kentucky)

# Catalog No. NR-28791

# 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: Kentucky

Strain: SL475 (also referred to as CVM29188)<sup>1,2</sup>

- <u>Original Source</u>: Salmonella enterica (S. enterica) subsp. enterica, strain SL475 (CVM29188) was isolated in 2003 from a chicken breast sample purchased through the National Antimicrobial Monitoring System (NARMS) retail meat surveillance program in Georgia, USA.<sup>3</sup>
- <u>Comments</u>: Strain SL475 (CVM29188) is reported to be a multi-drug resistant strain.<sup>1,3</sup> The complete genome for *S. enterica* subsp. *enterica*, strain SL475 (CVM29188) was sequenced at the <u>J. Craig Venter Institute</u> (GenBank: <u>ABAK00000000</u>); strain SL475 (CVM29188) is reported to contain three plasmids: an approximately 150 kilobase (kb) pair resistance/virulence plasmid (GenBank: <u>CP001122</u>), an approximately 100 kb pair resistance plasmid (<u>CP001121</u>) and an approximately 46 kb pair unknown plasmid (<u>CP001123</u>).<sup>1,3</sup>

*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.<sup>4</sup> Salmonellosis (non-typhoidal), due to the greater than 1500 serovars of *S. enterica* subsp. *enterica*, is one of the most common foodborne diseases with approximately 1 million cases that occur in the United States every year.<sup>5</sup> 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.<sup>6,7</sup>

*S. enterica* subsp. *enterica* serovar Kentucky (formerly *Salmonella Kentucky*) is wide-spread in the food supply but very rarely associated with human illness. It is often found in animal samples and has been the most common serotype isolated from chickens and chicken meat.<sup>3,8</sup> Some serovar

Kentucky strains display multi-drug resistance<sup>3,9,10</sup> and share plasmid homology with that of avian pathogenic *Escherichia coli* (APEC) isolates.<sup>3</sup>

## Material Provided:

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

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

### Packaging/Storage:

NR-28791 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:**

<u>Media</u>:

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 SL475 (CVM29188) (Serovar Kentucky), NR-28791."

## 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. <u>Biosafety in</u> <u>Microbiological and Biomedical Laboratories</u>. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see <u>www.cdc.gov/biosafety/publications/bmbl5/index.htm</u>.

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### **References:**

- 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
- Fricke, W. F., et al. "Antimicrobial Resistance-conferring Plasmids with Similarity to Virulence Plasmids from Avian Pathogenic *Escherichia coli* Strains in *Salmonella enterica* Serovar Kentucky Isolates from Poultry." <u>Appl.</u> <u>Environ. Microbiol.</u> 75 (2009): 5963-5971. PubMed: 19648374.
- Grimont, P. A. D. and F.-X. Weill. <u>Antigenic Formulae of the Salmonella Serovars, 2007, 9th edition.</u> Paris: WHO Collaborating Centre for Reference and Research on Salmonella, Pasteur Institute.
- Scallan, E., et al. "Foodborne Illness Acquired in the United States – Major Pathogens." <u>Emerg. Infect. Dis.</u> 17 (2011): 7-15. PubMed: 21192848.
- Lavigne, J. P. and A. B. Blanc-Potard. "Molecular Evolution of Salmonella enterica Serovar Typhimurium and Pathogenic Escherichia coli: From Pathogenesis to Therapeutics." <u>Infect. Genet. Evol.</u> 8 (2008): 217-226. PubMed: 18226587.
- Parsons, D. A. and F. Heffron. "sciS, an icmF Homolog in Salmonella enterica Serovar Typhimurium, Limits Intracellular Replication and Decreases Virulence." <u>Infect. Immun.</u> 73 (2005): 4338-4345. PubMed: 15972528.

- Foley, S. L., et al. "Population Dynamics of Salmonella enterica Serotypes in Commercial Egg and Poultry Production." <u>Appl. Environ. Microbiol.</u> 77 (2011): 4273-4279. PubMed: 21571882.
- Mulvey, M. R., et al. "Ciprofloxacin-Resistant Salmonella enterica Serovar Kentucky in Canada." <u>Emerg. Infect.</u> <u>Dis.</u> 19 (2013): 999-1001. PubMed: 23735312.
- Le Hello, S., et al. "International Spread of an Epidemic Population of Salmonella enterica Serotype Kentucky ST198 Resistant to Ciprofloxacin." <u>J. Infect. Dis.</u> 204 (2011): 675-684. PubMed: 21813512.
- Jacobsen, A., et al. "The Salmonella enterica Pangenome." <u>Microb. Ecol.</u> 62 (2011): 487-504. PubMed: 21643699.
- Yue, M., et al. "Diversification of the Salmonella Fimbriae: A Model of Macro- and Microevolution." <u>PLoS One</u> 7 (2012): e38596. PubMed: 22701679.

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