

Product Information

Lipopolysaccharides from *Shigella flexneri* serotype 1A

Catalog Number **L3670**

Storage Temperature 2–8 °C

Product Description

This product is a lyophilized phenol extract from *Shigella flexneri* serotype 1A containing lipopolysaccharides with <2% protein. This serotype has been shown to cause fever in experimental rats.¹

Lipopolysaccharides are characteristic components of the cell wall of Gram-negative bacteria; they are not found in Gram-positive bacteria. They are localized in the outer layer of the membrane and are, in noncapsulated strains, exposed on the cell surface. Lipopolysaccharides are made up of a hydrophobic lipid (lipid A, which is responsible for the toxic properties of the molecule), a hydrophilic core polysaccharide chain, and a hydrophilic O-antigenic polysaccharide side chain.

Shigella flexneri is a human pathogen causing endemic bacillary dysentery. Lipopolysaccharides play an important role in *Shigella* virulence. *Shigella flexneri* is divided into 14 serotypes based on the structure of the O antigen.^{2,3} Modification of the basic O antigen occurs through glucosylation and/or O-acetylation of one or more sugars within a repeating tetrasaccharide unit.⁴

Potency: ≥10,000 EU/mg

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

The product is soluble in water or culture medium (5 mg/ml), yielding a hazy solution.

Storage/Stability

Store the product at 2–8 °C.

References

1. Romanovsky, A.A., et al., "Biphasic" fevers often consist of more than two phases. *Am. J. Physiol.*, **275**, R323-R331 (1998).
2. Simmons, D.A., and Romanowska, E., Structure and biology of *Shigella flexneri* O antigens. *J. Med. Microbiol.*, **23**, 289-302 (1987).
3. Levine, M.M., Clinical trials of *Shigella* vaccines: two steps forward and one step back on a long, hard road. *Nat. Rev. Microbiol.*, **5**, 540-553 (2007).
4. Adhikari, P., et al., Serotype 1a O-antigen modification: molecular characterization of the genes involved and their novel organization in the *Shigella flexneri* chromosome. *J. Bacteriol.*, **181**, 4711–4718 (1999).

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