

CERTIFICATE OF ANALYSIS
LIPOPOLYSACCHARIDE
from *Salmonella typhimurium*,
Lot #2258A1Contents:

Each vial contains 5.0 mg of lyophilized lipopolysaccharide (LPS) isolated from *Salmonella typhimurium* by a modification of the phenol extraction method of Westphal and Jann.¹

Reconstitution/Storage:

LPS is dispersible in aqueous solvents at concentrations of 1.0 mg/ml. To achieve suspension in water, heating to about 50°C with intermittent vortexing or sonication is generally recommended.² Allow ample time for dispersion to occur. The use of 0.5% triethylamine aids in dispersion. Triethylamine is very basic and may be neutralized with Tris HCl to avoid hydrolysis of the fatty acid chains. It is recommended that this material be stored at 4°C prior to and following reconstitution.

Analysis:

| | |
|---|------|
| 2-Keto-3-deoxyoctonate (KDO) ³ | 3.2% |
| Phosphate ⁴ | 6.4% |
| Protein ⁵ | 0.9% |
| Nucleic acid ⁶ | 1.5% |

Handling:

Good laboratory technique should be employed in the safe handling of any lipopolysaccharide or lipid A product. This requires observing the following practices:

1. Wear appropriate laboratory attire including a lab coat, gloves and safety glasses.
2. Do not mouth pipette, inhale, ingest or allow to come into contact with open wounds. Wash thoroughly any area of the body which comes into contact with the product.

(continued)

3. **This product is pyrogenic. Avoid accidental autoinoculation by exercising extreme care when handling in conjunction with any injection device.**
4. **This product is intended for research purposes by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. List Biological Laboratories, Inc. is not liable for any damages resulting from the misuse or handling of this product.**

FOR RESEARCH PURPOSES ONLY. NOT FOR USE IN HUMANS.

References:

1. Westphal, O. and Jann, K. (1965) in R.L. Whistler (ed.) *Methods in Carbohydrate Chemistry* Vol. 5, p. 83, Academic Press, New York.
2. Mukerjee, P., Kastowsky, M., Obst, S., Takayama, K. (1999) Lipopolysaccharide Preparations in Aqueous Media in *Endotoxin in Health and Disease*, Brade, H., Opal, S.M., Vogel, S.N., Morrison, D.C. eds., Marcel Dekker, Inc., New York, p. 223-224.
3. Cynkin, M.A. and Ashwell, G. (1960) *Nature* **186**, 155-156.
4. Ames, B.N. and Dubin, D.T. (1960) *J. Biol. Chem.* **235**, 769-775.
5. Bradford, M.M. 1976 *Anal. Biochem.* **72**, 248-254.
6. Determined by absorption at 260 nm after correction for end absorption by LPS.

Approved: DY Date: 8/6/08 Approved: KA Date: 8/6/08