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CERTIFICATE OF ANALYSIS
LIPID A (primarily monophosphoryl)
from
Salmonella minnesota R595 (Re) Lipopolysaccharide
Lot #40138A

Contents:

Each vial contains 1.0 mg of lipid A prepared by acid hydrolysis of *Salmonella minnesota* R595 (Re) lipopolysaccharide according to a modification of the procedure of Morrison and Leive.¹

Activity:

The hydrolysis conditions employed here yield a preparation which, as assessed by thin layer chromatography and phosphate analysis, is primarily monophosphoryl lipid A (i.e., the glucosamine-1-phosphate group is no longer present and only the glucosamine-4'-phosphate remains). This product, therefore, would be expected to be mitogenic but considerably less toxic than its parent LPS or a diphosphoryl lipid A preparation that is prepared using milder hydrolysis conditions and in which the glucosamine-1-phosphate group is still present (see product #402).

Packaging/Reconstitution/Storage:

This product is provided as a lyophilized powder, sealed under vacuum. Lipid A is insoluble in water. It may be suspended in DMSO or 0.5% triethylamine. A usable suspension may also be achieved in water by heating at 50°C combined with intermittent vortexing and/or sonication.² This product should be stored at 4°C prior to and following reconstitution.

Analysis:

2-Keto-3-deoxyoctonate (KDO) ³	0.027%
Phosphate ⁴	3.4%

Handling:

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

(continued)

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.
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. Morrison, D.C. and Leive L. (1975) *J. Biol. Chem.* **250**, 2911-2919.
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.

Approved: _____



Date: 6-21-07

Approved: _____



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