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CERTIFICATE OF ANALYSIS  
TETANUS TOXIN  
Lot #19042C1

Contents:

Each vial, when reconstituted with 250  $\mu$ l of sterile distilled water, contains 25  $\mu$ g of tetanus toxin in 0.01 M sodium phosphate, pH 7.5.

Concentration:

Protein concentration is determined by a modification of the method of Bradford<sup>1</sup> using ovalbumin as the standard.

Purity:

This preparation migrates as a single band of molecular weight approximately 150,000 daltons when run on 4-20% polyacrylamide SDS gels prepared according to the method of Wyckoff<sup>2</sup>, a modification of the Laemmli<sup>3</sup> gel system. In the presence of  $\beta$ -mercaptoethanol, 2 bands are seen, the heavy chain at 100,000 daltons and the light chain at 50,000 daltons.

Activity:

Each lot of tetanus toxin is tested to confirm binding activity to G<sub>T1b</sub> ganglioside using a hemagglutination assay.<sup>4</sup>

Storage:

Store material at 4°C prior to and following reconstitution.

Toxicity:

Tetanus toxin is one of the most deadly toxins known to man. Even small amounts of tetanus toxin can pose a serious threat to an unvaccinated user. See handling precautions on reverse side.

(continued)

**Handling:**

Good laboratory technique should be employed in the safe handling of this product. This requires observing the following practices:

1. INTACT TETANUS TOXIN IS ONE OF THE MOST POTENT TOXINS KNOWN. THE LETHAL DOSE IN UNVACCINATED HUMANS IS ESTIMATED AT <2.5 ng/kg.<sup>5</sup> PERSONS HANDLING THIS PRODUCT AND CONTAMINATED GLASSWARE SHOULD HAVE A CURRENT TETANUS VACCINATION, AND THEIR SERUM ANTITOXIN LEVEL SHOULD BE GREATER THAN 1.0 INTERNATIONAL UNIT PER MILLILITER.
2. This product is to be used by skilled personnel under the direction of a principal investigator in a laboratory setting only.
3. Wear appropriate laboratory attire including a lab coat, gloves and safety glasses.
4. Never remove the stopper prior to reconstitution and never work with the product in the powdered form. Always reconstitute it first.
5. 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.
6. Avoid accidental autoinoculation by exercising extreme care when handling in conjunction with any injection device.
7. This product is intended for research purposes 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 HUMAN USE.**

**References:**

1. Bradford, M.M. (1976) *Anal. Biochem.* **72**, 248-254.
2. Wyckoff, M., Rodbard, D. and Chrambach, A. (1977) *Anal. Biochem.* **78**, 459-482.
3. Laemmli, U.K. (1970) *Nature* **227**, 680-685.
4. Tayot, J.-L., Holmgren, J., Svennerholm L., Lindblad, M. and Tardy, M. (1981) *Eur. J. Biochem.* **113**, 249-258.
5. Gill, D.M. (1982) *Microbiol. Rev.* **46**, 86-94.

Approved: jr Date: 3/23/06 Approved: KA Date: 3/23/06