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CERTIFICATE OF ANALYSIS
TETANUS TOXIN
from Clostridium tetani
Lot #19047A1

Contents

Each vial, when reconstituted with 100 µl water, contains 25 µg of Tetanus Toxin in 20 mM HEPES, pH 7.4 with 1.25% lactose. **Handle the product gently; do not vortex**.

Concentration

Protein concentration was determined by a modification of the method of Bradford¹ using ovalbumin as the standard.

Assay Results

When examined on 4 - 12% SDS-polyacrylamide gels, this protein migrates as a single major band with an apparent molecular weight of approximately 150,000 daltons. In the presence of a reducing agent, the preparation migrates as two bands with apparent molecular weights of 100,000 and 50,000 daltons. Densitometric analysis estimates the purity as >90%.

This Tetanus Toxin has been tested for enzymatic activity in an endopeptidase assay. Cleavage of 25% of 5 μ M GST-Synaptobrevin (Product #510A) was detected in a gel based assay after incubation with 20 nM Tetanus Toxin for one hour. The reaction was performed at 37°C in 0.02 M Tris-HCl, pH 8.0 with 0.05 M Sodium Chloride.

Binding activity to G_{T1b} ganglioside in a hemagglutination assay is also assessed.² Hemagglutination is evident at 12.5 µg/ml Tetanus Toxin.

The endotoxin content, determined using a kinetic chromogenic LAL assay, is approximately 10 EU/mg.

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. Consult the MSDS for further information.

Packaging/Storage

Tetanus Toxin is supplied as lyophilized powder, sealed under vacuum. Store at $2 - 8^{\circ}$ C prior to and after reconstitution.

(continued)

Handling

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

- 1. Persons handling this product and contaminated glassware should consult the current version of the Biosafety in Microbiological and Biomedical Laboratories, BMBL.³
- 2. This product is to be used by skilled personnel under the direction of a principal investigator in an appropriate laboratory.
- 3. Wear appropriate laboratory attire including lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material.
- 4. Because this product is stoppered under vacuum, it is recommended to reconstitute the contents using a syringe in a biological safety cabinet. <u>Never</u> 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 conjuction with any injection device.
- 7. This product is intended for research purposes by qualified personnel. 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. Tayot, J.-L., Holmgren, J., Svennerholm L., Lindblad, M. and Tardy, M. (1981) *Eur. J. Biochem.* **113**, 249 258.
- 3. Biosafety in Microbiological and Biomedical Laboratories. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institutes of Health.

Production: Lo Date: 2/15/13 Manager: NS Date: 2/15/13 QA/QC: 4P Date: 2/15/2013