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CERTIFICATE OF ANALYSIS  
PERTUSSIS TOXIN (SALT-FREE)  
Lot #181218A1

**Contents**

Each vial of Pertussis Toxin (salt-free) contains 50 µg of protein. Reconstitute with water or the buffer of your choice. Mix gently prior to use to ensure a uniform suspension. **Do not sterile filter, as this will result in loss of material. Handle the product gently; do not vortex.**

**Concentration**

A modification of the method of Bradford,<sup>1</sup> using bovine serum albumin as the standard, is used to determine the protein concentration.

**Purity**

This preparation migrates as five distinct bands, as described by Tamura et al.,<sup>2</sup> when run on 12% SDS-polyacrylamide gels.

This product has been tested for endotoxin levels and was found to be acceptable.

**Assays**

CHO Cell Assay: When examined in a CHO cell assay as described by Hewlett et al.,<sup>3</sup> the lowest concentration of toxin at which a positive response (clustered growth pattern) was obtained was 0.03 ng/ml.

Adenylate Cyclase Assay: The adenylate cyclase activity of this lot, in the presence of 1 µmolar calmodulin, is 28.3 picomole/cAMP/min/µg toxin, when assayed by the method of Wolff et al.<sup>4</sup>

**Packaging/Storage**

This product is provided as an aseptically packaged lyophilized powder, sealed under vacuum. Store at 2-8°C prior to and following reconstitution. **DO NOT FREEZE.**

**Activation**

Please note that this product is not activated. If your system requires activation, see Kaslow et al.<sup>5</sup> for suggested conditions.

(continued)

**Handling**

Good laboratory technique should be employed in the safe handling of this product. Wear appropriate laboratory attire including a lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material.

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 HUMAN USE.**

**References**

1. Bradford, M.M. (1976) *Anal. Biochem.* **72**, 248-254.
2. Tamura, M., Nogomori, K., Murai, S., Yajima, M., Ito, K., Katada, T., Ui, M. and Ishi, S. (1982) *Biochem.* **21**, 5516-5522.
3. Hewlett, E.L., Sauer, K.T., Myers, G.A., Cowell, J.L. and Guerrant, R.L. (1983) *Infect. Immun.* **40**, 1198-1203.
4. Wolff, J., Cook, G.H., Goldhammer, A.R. and Berkowitz, S.A. (1980) *PNAS* **77**, 3841-3844.
5. Kaslow, H.R., Lim, L.-K., Moss, J. and Lesikar, D.D. (1987) *Biochem.* **26**, 123-127.

Production: VFV Date: 2/14/13 Management: KRC Date: 3/4/13 QA/QC: RP Date: 2/15/2013