list labs

540 Division Street, Campbell, California 95008-6906
Tel. (408) 866-6363 Fax (408) 866-6364
www.listlabs.com

Product #690B
Release Date: April 2020

CERTIFICATE OF ANALYSIS
GST-SV2c, RECEPTOR FOR BOTULINUM NEUROTOXIN TYPE A
Lot #6905A1

Contents

Each vial contains 100 µg of GST-SV2c (U.S Patent #8,476,024). When reconstituted to 100 µL with water, the buffer is 20 mM HEPES, pH 7.4 with 1.25% lactose. **Handle the product gently; do not vortex.**

The protein was recombinantly expressed in *E. coli* and purified using affinity chromatography. The GST affinity tag has been retained.

Molecular Weight

GST-SV2c contains amino acids 454-579 of the full length SV2c protein. This region of the protein is known as the luminal domain loop, between transmembrane domains 7 and 8, and has been shown to be the location of botulinum neurotoxin type A (BoNT/A) binding.[1,2] The 25 kDa GST affinity tag is on the N-terminal. The total length of the fusion protein is 330 amino acids. The molecular weight of the protein is 41,733 Da based on analysis of the nucleic acid sequence.

Concentration

The protein concentration was determined by absorbance at 280 nm using an extinction coefficient of 1.253 for a 1 mg/ml solution. This value is calculated by ProtParam[3] using an algorithm based on the Edelhoch[4] method with modifications described in Pace et al[5].

Purity

When examined on 4 – 12% SDS-PAGE under reducing conditions, this protein migrates as a single major band with an apparent molecular weight of approximately 40,000 daltons. Densitometric analysis estimates the purity as >85%.

The endotoxin content, determined using a kinetic chromogenic LAL assay, is 3,440 EU/mg.

Functionality

The following posters demonstrate the functionality of the GST-SV2c fusion protein as a receptor for BoNT/A. Recent data from our laboratory indicates improved specificity and reliable detection of as little as 1.25 pg of BoNT/A when captured by the SV2c receptor.

1. K. Suryadi, T. Christian, and N. Shine. Sensitive and Specific Bifunctional Assay for Botulinum Neurotoxin Type A. The 49th Annual Interagency Botulinum Research Coordinating Committee Meeting, September, 2012 in Baltimore, MD.

2. T. Christian and N. Shine. Sensitive, *In Vitro*, Bifunctional Potency Assay for Botulinum Neurotoxin Type A. The 46th Annual Interagency Botulinum Research Coordinating Committee Meeting, October, 2009 in Alexandria, VA.

(continued)

3. T. Christian, A. Rummel, and N. Shine. Functional Assay for Botulinum Neurotoxin Type A Utilizing the Neuronal Receptor Protein SV2c. The 45th Annual Interagency Botulinum Research Coordinating Committee Meeting, September 2008 in Philadelphia, PA.

4. T. Christian and N. Shine. Capture Assay for Botulinum Neurotoxin Type A Utilizing the Neuronal Receptor Protein SV2c. The 6th International Conference on Basic and Theraputic Aspects of Botulinum and Tetanus Toxins, June, 2008 in Baveno, Italy.

Packaging and Storage

This preparation is provided as a lyophilized powder that has been stoppered under vacuum. Prior to reconstitution, it should be stored at 2 – 8°C.

Toxicity

GST-SV2c is non-toxic.

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 for use when handling lyophilized material.

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. Mahrhold, S., Rummel, A., Bigalke, H., Davletov, B., and Binz, T. (2006) FEBS Lett. **580**:2011-2014.

2. Dong, M., Yeh, F., Tepp, W.H., Dean, C., Johnson, E.A., Janz, R., and Chapman, E.R. (2006) Science **312**:592-596.

3. www.expasy.ch/tools/protparam-doc.html

4. Edelhoch, H. (1967) *Biochemistry*, **6**, 1948-1954.

5. Pace, C.N., Vajdos, F., Fee, L., Grimsley, G. and Gray, T. (1995) *Protein Sci.* **4**, 2411-2423.

QA/QC: VAS Date: 10NOV2010

Made in U.S.A.