SYSY Antibodies

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BoNT

Cat.No. 158 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 up to 1 : 10000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 422 from Clostridium botulinum BoNT (UniProt Id: Q00496)
Specificity	Specific for BoNT E.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

The neurotoxins of Clostridium botulinum **BoNT**s belong to the most potent protein toxins. These Zinc proteases elicit paralysis by cleaving SNARE proteins like SNAP 25, Syntaxin 1 and Synaptobrevin which mediate the fusion of synaptic vesicles with the presynaptic membrane.
There are seven known serotypes of BoNTs (A to G) with different cleavage properties. BoNTs are translated as ~150 kDa single-chain, non-toxic precursor proteins which are cleaved into a catalytic light chain (LC) and a heavy translocation chain (HCT).

Selected General References

The synaptic vesicle protein 2C mediates the uptake of botulinum neurotoxin A into phrenic nerves.
Mahrhold S et al. FEBS Lett. (2006) PubMed:16545378

SV2 is the protein receptor for botulinum neurotoxin A.
Dong M et al. Science (2006) PubMed:16543415

Structure of botulinum neurotoxin type D light chain at 1.65 A resolution: repercussions for VAMP-2 substrate specificity.
Arndt JW et al. Biochemistry (2006) PubMed:16519520

Unique substrate recognition by botulinum neurotoxins serotypes A and E.
Chen S et al. J. Biol. Chem. (2006) PubMed:16478727

Pharmacology of botulinum toxin: differences between type A preparations.
Rosales RL et al. Eur. J. Neurol. (2006) PubMed:16417591

Sensitive detection of botulinum neurotoxin types C and D with an immunoaffinity chromatographic column test.
Gessler F et al. Appl. Environ. Microbiol. (2005) PubMed:16332765

Sequence variation within botulinum neurotoxin serotypes impacts antibody binding and neutralization.
Smith TJ et al. Infect. Immun. (2005) PubMed:16113261

Synaptic vesicle chips to assay botulinum neurotoxins.
Ferracci G et al. Biochem. J. (2005) PubMed:16011482

New insights into clostridial neurotoxin-SNARE interactions.
Breidenbach MA et al. Trends Mol Med (2005) PubMed:16006188

Botulinal neurotoxins: revival of an old killer.
Montecucco C et al. Curr Opin Pharmacol (2005) PubMed:15907915

Structural analysis of botulinum neurotoxin type E catalytic domain and its mutant Glu212-->Gln reveals the pivotal role of the Glu212 carboxylate in the catalytic pathway.
Agarwal R et al. Biochemistry (2004) PubMed:15157097

Access the online factsheet including applicable protocols at https://sysy.com/product/158002 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.