SYSY Antibodies

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Munc13-2

Cat.No. 126 205; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°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 **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P**: not tested yet
Immunogen	Recombinant protein corresponding to AA 151 to 317 from rat Munc13-2 isoform 2 (UniProt Id: Q62769-2)
Reactivity	Reacts with: rat (Q62769-2), mouse (Q9Z1N9). Other species not tested yet.
Specificity	Specific for Munc 13-2 brain specific isoform K.O. validated

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

Background

Munc 13s are homologues of the C. elegans unc-13 gene product. Three brain specific isoforms, Munc 13-1, -13-2, and -13-3 are expressed in rat where they localize to presynaptic terminals. All three isoforms share multiple regulatory domains that may mediate phorbol ester and diacylglycerol binding.
Munc13-1 shows the broadest expression pattern and is found in cortex, cerebellum, olfactory bulb and hippocampus. Munc 13-2 is mainly expressed in cortex and hippocampus whereas **Munc 13-3** exhibits highest expression levels in cerebellum and pons. Munc13-1 interacts directly with a putative coiled coil domain in the N-terminal part of syntaxin and is involved in synaptic vesicle priming. For Munc13-2 an additional ubiquitously expressed N-terminal splice variant (ubMunc 13-2) has been described.
Munc 13-3 has been shown to be involved in the regulation of cerebellar synaptic transmission and motor learning.

Selected General References

Regulation of insulin exocytosis by Munc13-1.
Sheu L et al. J. Biol. Chem. (2003) PubMed:12871971

Rab34 and its effector munc13-2 constitute a new pathway modulating protein secretion in the cellular response to hyperglycemia.
Goldenberg NM et al. Am. J. Physiol., Cell Physiol. (2009) PubMed:19641095

Munc13-2-/- baseline secretion defect reveals source of oligomeric mucins in mouse airways.
Zhu Y et al. J. Physiol. (Lond.) (2008) PubMed:18258655

Bidirectional regulation of Munc13-3 protein expression by age and dark rearing during the critical period in mouse visual cortex.
Yang CB et al. Neuroscience (2007) PubMed:17997229

Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc13-1.
Ohtsuka T et al. J. Cell Biol. (2002) PubMed:12163476

Identification of Munc13-3 as a candidate gene for critical-period neuroplasticity in visual cortex.
Yang CB et al. J. Neurosci. (2002) PubMed:12351735

The cerebellum-specific Munc13 isoform Munc13-3 regulates cerebellar synaptic transmission and motor learning in mice.
Augustin I et al. J. Neurosci. (2001) PubMed:11150314

Munc13-1 acts as a priming factor for large dense-core vesicles in bovine chromaffin cells.
Ashery U et al. EMBO J. (2000) PubMed:10899113

Regulation of transmitter release by Unc-13 and its homologues.
Brose N et al. Curr. Opin. Neurobiol. (2000) PubMed:10851170

Differential expression of two novel Munc13 proteins in rat brain.
Augustin I et al. Biochem. J. (1999) PubMed:9895278

Direct interaction of the rat unc-13 homologue Munc13-1 with the N terminus of syntaxin.
Betz A et al. J. Biol. Chem. (1997) PubMed:8999968

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC et al. Nature (1995) PubMed:7791897

Mammalian homologues of Caenorhabditis elegans unc-13 gene define novel family of C2-domain proteins.
Brose N et al. J. Biol. Chem. (1995) PubMed:7559667

Synaptic vesicles and exocytosis.
Jahn R et al. Annu. Rev. Neurosci. (1994) PubMed:8210174

Access the online factsheet including applicable protocols at https://sysy.com/product/126205 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.