SYSY Antibodies

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Munc18-1

Cat.No. 116 003; Polyclonal rabbit 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 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500 **DNA-PAINT**: external data (see remarks)
Immunogen	Synthetic peptide corresponding to AA 580 to 594 from rat Munc18-1 (UniProt Id: P61765)
Reactivity	Reacts with: human (P61764), rat (P61765), mouse (O08599), cow. Other species not tested yet.
Specificity	K.D. validated PubMed: 34103363
Matching control	116-0P
Remarks	**DNA-PAINT**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

Munc 18 is an abundant neuronal protein that tightly binds to the synaptic fusion protein syntaxin 1. It is highly homologous to the C. elegans unc-18 gene product, and weakly related to the yeast sec1, sly1, and slp1 genes.
There are three munc 18 isoforms in mammals. **Munc 18-1** or 18a, also referred to as **rb-sec1**, **n-sec1**, **stxbp1** and **p67**, is primarily expressed in neurons. **Munc 18-2** or 18b, also referred to as **stxbp2**, and Munc 18-3 or 18c are expressed ubiquitously.

Selected References for 116 003

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

Munc18-1 is essential for neuropeptide secretion in neurons.
Puntman DC, Arora S, Farina M, Toonen RF, Verhage M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2021) : . . **WB; KD verified; tested species: mouse**

Protein instability, haploinsufficiency, and cortical hyper-excitability underlie STXBP1 encephalopathy.
Kovacevic J, Maroteaux G, Schut D, Loos M, Dubey M, Pitsch J, Remmelink E, Koopmans B, Crowley J, Cornelisse LN, Sullivan PF, et al.
Brain : a journal of neurology (2018) : . . **ICC; tested species: mouse**

Comparative neurotoxic effects of PFOA and GenX in hiPSC-derived cortical neurons.
Zhao H, Xie J, Wu S, Zhao X, Yu S, Freeman JL, Rochet JC, Yuan C
Journal of hazardous materials (2026) 507: 141766. . **ICC; tested species: human**

Expression of synaptic proteins and development of dendritic spines in fetal and postnatal neocortex of the pig, the European wild boar Sus scrofa.
Sobierajski E, Czubay K, Schmidt MR, Wiedenski S, Rettschlag S, Beemelmans C, Beemelmans C, Wahle P
Brain structure & function (2025) 2302: 38. . **WB; tested species: pig**

Brain-region-specific changes in neurons and glia and dysregulation of dopamine signaling in Grin2a mutant mice.
Farsi Z, Nicolella A, Simmons SK, Aryal S, Shepard N, Brenner K, Lin S, Herzog L, Moran SP, Stalnaker KJ, Shin W, et al.
Neuron (2023) 11121: 3378-3396.e9. . **WB; tested species: mouse**

Bidirectional regulation of synaptic SUMOylation by Group 1 metabotropic glutamate receptors.
Pronot M, Poupon G, Pizzamiglio L, Prieto M, Chato-Astrain I, Lacagne I, Schorova L, Folci A, Brau F, Martin S
Cellular and molecular life sciences : CMLS (2022) 797: 378. . **WB; tested species: rat**

Identification of Synaptic DGKθ Interactors That Stimulate DGKθ Activity.
Barber CN, Goldschmidt HL, Ma Q, Devine LR, Cole RN, Huganir RL, Raben DM
Frontiers in synaptic neuroscience (2022) 14: 855673. . **WB; tested species: rat**

Dopamine Secretion Is Mediated by Sparse Active Zone-like Release Sites.
Liu C, Kershberg L, Wang J, Schneeberger S, Kaeser PS
Cell (2018) 1724: 706-718.e15. . **ICC; tested species: mouse**

Selected General References

Molecular identification of two novel Munc-18 isoforms expressed in non-neuronal tissues.
Tellam JT et al. J. Biol. Chem. (1995) PubMed:7890715

Slp4-a/granuphilin-a interacts with syntaxin-2/3 in a Munc18-2-dependent manner.
Fukuda M et al. J. Biol. Chem. (2005) PubMed:16186111

Access the online factsheet including applicable protocols at https://sysy.com/product/116003 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.