SYSY Antibodies

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# Munc18-1

**Cat.No. 116 002; 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.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications | **WB**: 1 : 1000 (AP staining)<br>**IP**: yes<br>**ICC**: 1 : 500 up to 1 : 1000<br>**IHC**: 1 : 500<br>**IHC-P**: 1 : 500<br>**ELISA**: yes (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.<br>Other species not tested yet. |
| Specificity | K.O. validated PubMed: 32073399 |
| Matching control | 116-0P |
| Remarks | **ELISA**: Suitable as detector antibody for sandwich-ELISA with cat. no. 116 011 as capture antibody. The ELISA-protocol for membrane proteins is recommended. |

**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 116 002

Liprin-α2 promotes the presynaptic recruitment and turnover of RIM1/CASK to facilitate synaptic transmission.
Spangler SA, Schmitz SK, Kevenaar JT, de Graaff E, de Wit H, Demmers J, Toonen RF, Hoogenraad CC
The Journal of cell biology (2013) 2016: 915-28. . **WB, ICC**

Munc-18 associates with syntaxin and serves as a negative regulator of exocytosis in the pancreatic beta -cell.
Zhang W, Efanov A, Yang SN, Fried G, Kolare S, Brown H, Zaitsev S, Berggren PO, Meister B
The Journal of biological chemistry (2000) 27552: 41521-7. . **IP, IHC**

MAFA and MAFB regulate exocytosis-related genes in human β-cells.
Cataldo LR, Singh T, Achanta K, Bsharat S, Prasad RB, Luan C, Renström E, Eliasson L, Artner I
Acta physiologica (Oxford, England) (2022) 2342: e13761. . **WB, IHC; tested species: mouse**

Endophilin-A coordinates priming and fusion of neurosecretory vesicles via intersectin.
Gowrisankaran S, Houy S, Del Castillo JGP, Steubler V, Gelker M, Kroll J, Pinheiro PS, Schwitters D, Halbsgut N, Pechstein A, van Weering JRT, et al.
Nature communications (2020) 111: 1266. . **WB, ICC; tested species: mouse**

Autism and Schizophrenia-Associated CYFIP1 Regulates the Balance of Synaptic Excitation and Inhibition.
Davenport EC, Szulc BR, Drew J, Taylor J, Morgan T, Higgs NF, López-Doménech G, Kittler JT
Cell reports (2019) 268: 2037-2051.e6. . **WB, ICC; tested species: mouse**

Dysregulation of the SNARE-binding protein Munc18-1 impairs BDNF secretion and synaptic neurotransmission: a novel interventional target to protect the aging brain.
Lee YI, Kim YG, Pyeon HJ, Ahn JC, Logan S, Orock A, Joo KM, Lőrincz A, Deák F
GeroScience (2019) : . . **WB, IHC; KD verified; tested species: mouse**

Abrogating Munc18-1-SNARE complex interaction has limited impact on exocytosis in PC12 cells.
Malintan NT, Nguyen TH, Han L, Latham CF, Osborne SL, Wen PJ, Lim SJ, Sugita S, Collins BM, Meunier FA
The Journal of biological chemistry (2009) 28432: 21637-46. . **WB, ICC; tested species: rat**

Membrane Location of Syntaxin-Binding Protein 1 Is Correlated with Poor Prognosis of Lung Adenocarcinoma.
Wang X, Fu G, Wen J, Chen H, Zhang B, Zhu D
The Tohoku journal of experimental medicine (2020) 2504: 263-270. . **IHC-P; tested species: human**

Reduced synaptic depression in human neurons carrying homozygous disease-causing STXBP1 variant L446F.
Öttl M, Toonen RF, Verhage M
Human molecular genetics (2024) : . . **WB; tested species: stem cells**

GABAergic/Glycinergic and Glutamatergic Neurons Mediate Distinct Neurodevelopmental Phenotypes of STXBP1 Encephalopathy.
Kim JH, Chen W, Chao ES, Rivera A, Kaku HN, Jiang K, Lee D, Chen H, Vega JM, Chin TV, Jin K, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 4414: . . **WB; tested species: mouse**

Lifelong absence of microglia alters hippocampal glutamatergic networks but not synapse and spine density.
Surala M, Soso-Zdravkovic L, Munro D, Rifat A, Ouk K, Vida I, Priller J, Madry C
EMBO reports (2024) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/116002 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.