SYSY Antibodies

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Piccolo

Cat.No. 142 002; 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 : 5000 (ECL detection) (see remarks) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: external data (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 4439 to 4776 from rat Piccolo (UniProt Id: Q9JKS6)
Reactivity	Reacts with: rat (Q9JKS6), mouse (Q9QYX7). Other species not tested yet.
Specificity	K.O. validated PubMed: 27537483
Matching control	142-0P
Remarks	**WB**: Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE. This antibody detects an additional band of ~65 kDa. **IHC**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols.

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

Background

Piccolo, also referred to as **Aczonin**, is a large protein which consists of an N-terminal Zn^{2+} finger, several piccolo-bassoon homology domains (PBH-domains) and C-terminal PDZ and C2 domains. In general it is found together with bassoon, a related huge multi-domain protein of the CAZ (cytoskeletal matrix assembled at active zones).
Piccolo is supposed to be a scaffolding protein for proteins involved in endo- and exocytosis of synaptic vesicles. Recently piccolo has been shown to interfere with clathrin mediated endocytosis by binding to the F-actin and dynamin binding protein Abp1.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 142 002

Molecular dynamics of photoreceptor synapse formation in the developing chick retina.
Wahlin KJ, Moreira EF, Huang H, Yu N, Adler R
The Journal of comparative neurology (2008) 5065: 822-37. . **WB, IHC**

ADAM10 hyperactivation acts on piccolo to deplete synaptic vesicle stores in Huntington's disease.
Cozzolino F, Vezzoli E, Cheroni C, Besusso D, Conforti P, Valenza M, Iacobucci I, Monaco V, Birolini G, Bombaci M, Falqui A, et al.
Human molecular genetics (2021) : . . **WB, IP; tested species: mouse**

No symphony without bassoon and piccolo: changes in synaptic active zone proteins in Huntington's disease.
Huang TT, Smith R, Bacos K, Song DY, Faull RM, Waldvogel HJ, Li JY
Acta neuropathologica communications (2020) 81: 77. . **ICC, IHC; tested species: human,mouse**

The metabolite p-cresol impairs dendritic development, synaptogenesis, and synapse function in hippocampal neurons: Implications for autism spectrum disorder.
Guzmán-Salas S, Weber A, Malci A, Lin X, Herrera-Molina R, Cerpa W, Dorador C, Signorelli J, Zamorano P
Journal of neurochemistry (2022) 1614: 335-349. . **ICC; tested species: rat**

Neurexins play a crucial role in cerebellar granule cell survival by organizing autocrine machinery for neurotrophins.
Uemura T, Suzuki-Kouyama E, Kawase S, Kurihara T, Yasumura M, Yoshida T, Fukai S, Yamazaki M, Fei P, Abe M, Watanabe M, et al.
Cell reports (2022) 391: 110624. . **ICC; tested species: mouse**

Coordinated bi-directional trafficking of synaptic vesicle and active zone proteins in peripheral nerves.
Juranek JK, Mukherjee K, Jahn R, Li JY
Biochemical and biophysical research communications (2021) 559: 92-98. . **IHC; tested species: rat**

Neuronal Autophagy Regulates Presynaptic Neurotransmission by Controlling the Axonal Endoplasmic Reticulum.
Kuijpers M, Kochlamazashvili G, Stumpf A, Puchkov D, Swaminathan A, Lucht MT, Krause E, Maritzen T, Schmitz D, Haucke V
Neuron (2021) 1092: 299-313.e9. . **ICC; tested species: mouse**

Loss of Piccolo Function in Rats Induces Cerebellar Network Dysfunction and Pontocerebellar Hypoplasia Type 3-like Phenotypes.
Falck J, Bruns C, Hoffmann-Conaway S, Straub I, Plautz EJ, Orlando M, Munawar H, Rivalan M, Winter Y, Izsvák Z, Schmitz D, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) 4014: 2943-2959. . **WB; KO verified; tested species: rat**

Identification of Potential Interacting Proteins With the Extracellular Loops of the Neuronal Glycoprotein M6a by TMT/MS.
Aparicio GI, Formoso K, León A, Frasch AC, Scorticati C
Frontiers in synaptic neuroscience (2020) 12: 28. . **ICC; tested species: rat**

Interaction of Axonal Chondrolectin with Collagen XIXa1 Is Necessary for Precise Neuromuscular Junction Formation.
Oprişoreanu AM, Smith HL, Arya S, Webster R, Zhong Z, Wehner D, Cardozo MJ, Becker T, Talbot K, Becker CG
Cell reports (2019) 295: 1082-1098.e10. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/142002 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.