SYSY Antibodies

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Piccolo

Cat.No. 142 003; 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 **IP**: not tested yet **ICC**: 1 : 200 up to 1 : 500 **IHC**: 1 : 500 **IHC-P**: 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
Matching control	142-0P

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.

Selected References for 142 003

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 3446187: 1023-8. . **ICC, IHC; tested species: mouse,rat**

Multiplex imaging of human induced pluripotent stem cell-derived neurons with CO-Detection by indEXing (CODEX) technology.
Heinrich L, Zafar F, Morato Torres CA, Singh J, Khan A, Chen MY, Hempel C, Nikulina N, Mulholland J, Braubach O, Schüle B, et al.
Journal of neuroscience methods (2022) : 109653. . **CODEX_PC; tested species: human**

How to Make an Active Zone: Unexpected Universal Functional Redundancy between RIMs and RIM-BPs.
Acuna C, Liu X, Südhof TC
Neuron (2016) 914: 792-807. . **WB**

Liprin-α proteins are master regulators of human presynapse assembly.
Marcó de la Cruz B, Campos J, Molinaro A, Xie X, Jin G, Wei Z, Acuna C, Sterky FH
Nature neuroscience (2024) : . . **ICC; tested species: human**

α-Synuclein induced cholesterol lowering increases tonic and reduces depolarization-evoked synaptic vesicle recycling and glutamate release.
Lazarevic V, Yang Y, Paslawski W, Svenningsson P
NPJ Parkinson's disease (2022) 81: 71. . **ICC; tested species: mouse**

Volumetric super-resolution imaging by serial ultrasectioning and stochastic optical reconstruction microscopy in mouse neural tissue.
Vatan T, Minehart JA, Zhang C, Agarwal V, Yang J, Speer CM
STAR protocols (2021) 24: 100971. . **IHC; tested species: mouse**

Lithium causes differential effects on postsynaptic stability in normal and denervated neuromuscular synapses.
Zelada D, Barrantes FJ, Henríquez JP
Scientific reports (2021) 111: 17285. . **IHC; tested species: mouse**

Structure-function relation of the developing calyx of Held synapse in vivo.
Sierksma MC, Slotman JA, Houtsmuller AB, Borst JGG
The Journal of physiology (2020) 59820: 4603-4619. . **IHC; tested species: rat**

LKB1 coordinates neurite remodeling to drive synapse layer emergence in the outer retina.
Burger CA, Alevy J, Casasent AK, Jiang D, Albrecht NE, Liang JH, Hirano AA, Brecha N, Samuel MA
eLife (2020) 9: . . **IHC; tested species: mouse**

Neuromodulator Signaling Bidirectionally Controls Vesicle Numbers in Human Synapses.
Patzke C, Brockmann MM, Dai J, Gan KJ, Grauel MK, Fenske P, Liu Y, Acuna C, Rosenmund C, Südhof TC
Cell (2019) 1792: 498-513.e22. . **ICC; tested species: mouse**

Synaptic neurexin-1 assembles into dynamically regulated active zone nanoclusters.
Trotter JH, Hao J, Maxeiner S, Tsetsenis T, Liu Z, Zhuang X, Südhof TC
The Journal of cell biology (2019) : . . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/142003 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.