SYSY Antibodies

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Shank3

Cat.No. 162 302; 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 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 (see remarks) **IHC-P**: not tested yet **IHC-Fr**: 1 : 500 **EM**: external data
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of rat Shank3 (UniProt Id: Q9JLU4)
Reactivity	Reacts with: rat (Q9JLU4), mouse (Q4ACU6). Other species not tested yet.
Specificity	K.O. validated
Remarks	**IHC**: This antibody requires mild fixation. **IHC-Fr**: 4% formaldehyde/PFA fixation is recommended.

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

Background

Shank1, 2 and **3** are major proteins of the postsynaptic density (PSD). They are composed of several protein-protein interaction domains like PDZ-, homer- and ABP1-binding domains which allow them to crosslink ionotopic and metabotropic glutamate receptor complexes with each other and to the actin-cytoskeleton.

Selected References for 162 302

SHANK3 Antibody Validation: Differential Performance in Western Blotting, Immunocyto- and Immunohistochemistry.
Lutz AK, Bauer HF, Ioannidis V, Schön M, Boeckers TM
Frontiers in synaptic neuroscience (2022) 14: 890231. . **WB, ICC, IHC; tested species: mouse**

Early developmental deletion of forebrain Ank2 causes seizure-related phenotypes by reshaping the synaptic proteome.
Yoon S, Santos MD, Forrest MP, Pratt CP, Khalatyan N, Mohler PJ, Savas JN, Penzes P
Cell reports (2023) 427: 112784. . **WB, IP; tested species: mouse**

Zinc Stabilizes Shank3 at the Postsynaptic Density of Hippocampal Synapses.
Tao-Cheng JH, Toy D, Winters CA, Reese TS, Dosemeci A
PloS one (2016) 115: e0153979. . **WB, EM**

Shank3 is localized in axons and presynaptic specializations of developing hippocampal neurons and involved in the modulation of NMDA receptor levels at axon terminals.
Halbedl S, Schoen M, Feiler MS, Boeckers TM, Schmeisser MJ
Journal of neurochemistry (2016) 1371: 26-32. . **WB, ICC**

Reduced Glutamate Release in Adult BTBR Mouse Model of Autism Spectrum Disorder.
Wei H, Ma Y, Ding C, Jin G, Liu J, Chang Q, Hu F, Yu L
Neurochemical research (2016) 4111: 3129-3137. . **WB, EM**

Inhibition of IL-6 trans-signaling in the brain increases sociability in the BTBR mouse model of autism.
Wei H, Ma Y, Liu J, Ding C, Jin G, Wang Y, Hu F, Yu L
Biochimica et biophysica acta (2016) 186210: 1918-25. . **WB, IHC; tested species: mouse**

Effects of trace metal profiles characteristic for autism on synapses in cultured neurons.
Hagmeyer S, Mangus K, Boeckers TM, Grabrucker AM
Neural plasticity (2015) 2015: 985083. . **ICC, WB**

ZCCHC17 knockdown phenocopies Alzheimer's disease-related loss of synaptic proteins and hyperexcitability.
Cortese GP, Bartosch AMW, Xiao H, Gribkova Y, Lam TG, Argyrousi EK, Sivakumar S, Cardona C, Teich AF
Journal of neuropathology and experimental neurology (2024) : . . **ICC; tested species: rat**

Differential effectiveness of dietary zinc supplementation with autism-related behaviours in Shank2 knockout mice.
Lee K, Jung Y, Vyas Y, Mills Z, McNamara L, Montgomery JM
Philosophical transactions of the Royal Society of London. Series B, Biological sciences (2024) 3791906: 20230230. . **IHC; tested species: mouse**

Modification of the synaptic cleft under excitatory conditions.
Tao-Cheng JH, Moreira SL, Winters CA, Reese TS, Dosemeci A
Frontiers in synaptic neuroscience (2023) 15: 1239098. . **EM; tested species: mouse**

Dietary zinc supplementation rescues fear-based learning and synaptic function in the Tbr1+/- mouse model of autism spectrum disorders.
Lee K, Jung Y, Vyas Y, Skelton I, Abraham WC, Hsueh YP, Montgomery JM
Molecular autism (2022) 131: 13. . **IHC; tested species: mouse**

SREBP2 gene therapy targeting striatal astrocytes ameliorates Huntington's disease phenotypes.
Birolini G, Verlengia G, Talpo F, Maniezzi C, Zentilin L, Giacca M, Conforti P, Cordiglieri C, Caccia C, Leoni V, Taroni F, et al.
Brain : a journal of neurology (2021) 14410: 3175-3190. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/162302 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.