SYSY Antibodies

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Homer1

Cat.No. 160 002; 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 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 (see remarks) **IHC**: yes **IHC-P**: 1 : 500 **ExM**: yes (see remarks)
Immunogen	Recombinant protein corresponding to the N-terminal half of human Homer 1 (UniProt Id: Q86YM7)
Reactivity	Reacts with: human (Q86YM7), rat (Q9Z214), mouse (Q9Z2Y3). Other species not tested yet.
Specificity	Specific for Homer 1. Cross-reactivity of the serum to Homer 2 and 3 was removed by pre-adsorption with Homer 2 (aa 1 - 176) and Homer 3 (aa 1 - 177). According to Soloviev et al. (2000), aa 1 - 180 are present in isoforms a, b, c and d.
Matching control	160-0P
Remarks	**ICC**: PFA fixation is recommended. **ExM**: This antibody has been successfully used for the epitope-preserving magnified analysis of the proteome (eMAP) expansion microscopy method (Park et al. 2021. PMID: 34767453).

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

Background

Homer is a scaffolding protein of the post synaptic density (PSD) and enriched at excitatory synapses. The protein binds metabotropic glutamate receptors, TRPC1, proteins of the Shank family and others. By aggregating these proteins into clusters, homer was suggested to organize distinct signalling domains.
Three isoforms, **Homer 1**, 2 and 3 have been described. Each of these isoforms is subject to alternative splicing yielding the splice variants a, b, c, d.

Selected References for 160 002

Microtubule-associated protein 1B (MAP1B)-deficient neurons show structural presynaptic deficiencies in vitro and altered presynaptic physiology.
Bodaleo FJ, Montenegro-Venegas C, Henríquez DR, Court FA, Gonzalez-Billault C
Scientific reports (2016) 6: 30069. . **WB, ICC**

Comparison of Multiscale Imaging Methods for Brain Research.
Tröger J, Hoischen C, Perner B, Monajembashi S, Barbotin A, Löschberger A, Eggeling C, Kessels MM, Qualmann B, Hemmerich P
Cells (2020) 96: . . **ICC, IHC; tested species: mouse,rat**

Nonapoptotic caspase-3 guides C1q-dependent synaptic phagocytosis by microglia.
Andoh M, Shinoda N, Taira Y, Araki T, Kasahara Y, Takeuchi H, Miura M, Ikegaya Y, Koyama R
Nature communications (2025) 161: 918. . **ICC, IHC; tested species: mouse**

Astrocyte-secreted neurocan controls inhibitory synapse formation and function.
Irala D, Wang S, Sakers K, Nagendren L, Ulloa Severino FP, Bindu DS, Savage JT, Eroglu C
Neuron (2024) 11210: 1657-1675.e10. . **ICC, IHC; tested species: mouse,rat**

A genetic variant of the Wnt receptor LRP6 accelerates synapse degeneration during aging and in Alzheimer's disease.
Jones ME, Büchler J, Dufor T, Palomer E, Teo S, Martin-Flores N, Boroviak K, Metzakopian E, Gibb A, Salinas PC
Science advances (2023) 92: eabo7421. . **ICC, IHC; tested species: mouse**

Changes in the Synaptic Proteome in Tauopathy and Rescue of Tau-Induced Synapse Loss by C1q Antibodies.
Dejanovic B, Huntley MA, De Mazière A, Meilandt WJ, Wu T, Srinivasan K, Jiang Z, Gandham V, Friedman BA, Ngu H, Foreman O, et al.
Neuron (2018) : . . **WB, ICC; tested species: mouse**

Contribution of the astrocytic tau pathology to synapse loss in progressive supranuclear palsy and corticobasal degeneration.
Briel N, Pratsch K, Roeber S, Arzberger T, Herms J
Brain pathology (Zurich, Switzerland) (2021) 314: e12914. . **IHC-P; tested species: human**

SynBot is an open-source image analysis software for automated quantification of synapses.
Savage JT, Ramirez JJ, Risher WC, Wang Y, Irala D, Eroglu C
Cell reports methods (2024) 49: 100861. . **ICC; tested species: mouse,rat**

Cell-autonomous reduction of CYFIP2 changes dendrite length, dendritic protrusion morphology, and inhibitory synapse density in the hippocampal CA1 pyramidal neurons of 17-month-old mice.
Kim Y, Ma R, Zhang Y, Kang HR, Kim US, Han K
Animal cells and systems (2024) 281: 294-302. . **IHC; tested species: mouse**

Vaccination reduces central nervous system IL-1β and memory deficits after COVID-19 in mice.
Vanderheiden A, Hill JD, Jiang X, Deppen B, Bamunuarachchi G, Soudani N, Joshi A, Cain MD, Boon ACM, Klein RS
Nature immunology (2024) 257: 1158-1171. . **IHC; tested species: mouse**

Piccolino is required for ribbon architecture at cochlear inner hair cell synapses and for hearing.
Michanski S, Kapoor R, Steyer AM, Möbius W, Früholz I, Ackermann F, Gültas M, Garner CC, Hamra FK, Neef J, Strenzke N, et al.
EMBO reports (2023) 249: e56702. . **IHC; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/160002 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.