SYSY Antibodies

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Homer1

Cat.No. 160 003; 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 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 (see remarks) **IHC**: 1 : 200 **IHC-P**: 1 : 500 up to 1 : 1000 **ExM**: yes **DNA-PAINT**: 1 : 500 **iDISCO**: yes **ELISA**:
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).
Matching control	160-0P
Remarks	**ICC**: PFA fixation is recommended.

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 160 003

Homer is concentrated at the postsynaptic density and does not redistribute after acute synaptic stimulation.
Tao-Cheng JH, Thein S, Yang Y, Reese TS, Gallant PE
Neuroscience (2014) 266: 80-90. . **WB, EM; tested species: rat**

[Artificial urinary sphincter in the treatment of neurogenic bladder in children].
Guys JM, Faure F, Chiapello A, Monfort G
Chirurgie pediatrique (1988) 294: 178-80. . **ICC, IHC; tested species: rat**

Hippocampal dendritic spines express the RyR3 but not the RyR2 ryanodine receptor isoform.
Vega-Vásquez I, Lobos P, Toledo J, Adasme T, Paula-Lima A, Hidalgo C
Biochemical and biophysical research communications (2022) 633: 96-103. . **ICC, EXM; tested species: rat**

Structural and functional connections between the median and the ventrolateral preoptic nucleus.
Walter A, van der Spek L, Hardy E, Bemelmans AP, Rouach N, Rancillac A
Brain structure & function (2019) 2249: 3045-3057. . **IHC, IDISCO; tested species: mouse**

Homer1a drives homeostatic scaling-down of excitatory synapses during sleep.
Diering GH, Nirujogi RS, Roth RH, Worley PF, Pandey A, Huganir RL
Science (New York, N.Y.) (2017) 3556324: 511-515. . **WB, IP; tested species: mouse**

Synaptic signatures and disease vulnerabilities of layer 5 pyramidal neurons.
Marcassa G, Dascenco D, Lorente-Echeverría B, Daaboul D, Vandensteen J, Leysen E, Baltussen L, Howden AJM, de Wit J
Nature communications (2025) 161: 228. . **WB, IHC; tested species: mouse**

Mitigation of synaptic and memory impairments via F-actin stabilization in Alzheimer's disease.
P A H, Basavaraju N, Chandran M, Jaleel A, Bennett DA, Kommaddi RP
Alzheimer's research & therapy (2024) 161: 200. . **WB, ICC; tested species: mouse**

Manipulation of DHPS activity affects dendritic morphology and expression of synaptic proteins in primary rat cortical neurons.
Cavalli P, Raffauf A, Passarella S, Helmuth M, Dieterich DC, Landgraf P
Frontiers in cellular neuroscience (2024) 18: 1465011. . **WB, ICC; tested species: 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**

Loss of microglial MCT4 leads to defective synaptic pruning and anxiety-like behavior in mice.
Monsorno K, Ginggen K, Ivanov A, Buckinx A, Lalive AL, Tchenio A, Benson S, Vendrell M, D'Alessandro A, Beule D, Pellerin L, et al.
Nature communications (2023) 141: 5749. . **WB, IHC; tested species: mouse**

Developmental Pb exposure increases AD risk via altered intracellular Ca2+ homeostasis in hiPSC-derived cortical neurons.
Xie J, Wu S, Szadowski H, Min S, Yang Y, Bowman AB, Rochet JC, Freeman JL, Yuan C
The Journal of biological chemistry (2023) : 105023. . **WB, ICC; tested species: human**

The human milk component myo-inositol promotes neuronal connectivity.
Paquette AF, Carbone BE, Vogel S, Israel E, Maria SD, Patil NP, Sah S, Chowdhury D, Kondratiuk I, Labhart B, Morrow AL, et al.
Proceedings of the National Academy of Sciences of the United States of America (2023) 12030: e2221413120. . **ICC, IHC; tested species: human,rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/160003 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.