SYSY Antibodies

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Homer1

Cat.No. 160 006; Polyclonal chicken 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**: not tested yet **ICC**: 1 : 1000 **IHC**: 1 : 500 **IHC_P**: 1 : 500 **EXM**: 1 : 250 (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. According to Soloviev et al. (2000), aa 1 - 180 are present in isoforms a, b, c and d.
Matching control	160-0P
Remarks	**EXM**: This antibody has been successfully used for the magnified analysis of the proteome (MAP) expansion microscopy method (MAP; Ku et al. 2016. Nature Biotechnology 34:973-981)

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 160 006

Inhibition of LRRK2 kinase activity promotes anterograde axonal transport and presynaptic targeting of α-synuclein.
Brzozowski CF, Hijaz BA, Singh V, Gcwensa NZ, Kelly K, Boyden ES, West AB, Sarkar D, Volpicelli-Daley LA
Acta neuropathologica communications (2021) 91: 180. . **ICC, IHC; tested species: mouse**

Cationic peptides erase memories by removing synaptic AMPA receptors through endophilin-mediated endocytosis.
Beier K, Stokes E, Zhuang Y, Toledano M, Vasquez J, Azouz G, Hui M, Tyler I, Shi X, Aoto J
Research square (2023) : . . **ICC, EXM; tested species: mouse**

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**

Interleukin-4 receptor signaling modulates neuronal network activity.
Hanuscheck N, Thalman C, Domingues M, Schmaul S, Muthuraman M, Hetsch F, Ecker M, Endle H, Oshaghi M, Martino G, Kuhlmann T, et al.
The Journal of experimental medicine (2022) 2196: . . **ICC, IHC; tested species: human,mouse**

Deep proteomics identifies shared molecular pathway alterations in synapses of patients with schizophrenia and bipolar disorder and mouse model.
Aryal S, Bonanno K, Song B, Mani DR, Keshishian H, Carr SA, Sheng M, Dejanovic B
Cell reports (2023) 425: 112497. . **WB; tested species: human**

Protecting RNA quality for spatial transcriptomics while improving immunofluorescent staining quality.
Hahn N, Bens M, Kempfer M, Reißig C, Schmidl L, Geis C
Frontiers in neuroscience (2023) 17: 1198154. . **IHC_FR; tested species: mouse**

P2Y1 receptor blockade normalizes network dysfunction and cognition in an Alzheimer's disease model.
Reichenbach N, Delekate A, Breithausen B, Keppler K, Poll S, Schulte T, Peter J, Plescher M, Hansen JN, Blank N, Keller A, et al.
The Journal of experimental medicine (2018) : . . **IHC-P; tested species: mouse**

Low-dose PLX5622 treatment prevents neuroinflammatory and neurocognitive sequelae after sepsis.
Mein N, von Stackelberg N, Wickel J, Geis C, Chung HY
Journal of neuroinflammation (2023) 201: 289. . **IHC; tested species: mouse**

High-Content Screening of Synaptic Density Modulators in Primary Neuronal Cultures.
Coulon A, Siedlecki-Wullich D, Najdek C, Gelle C, Ayral AM, Demiautte F, Lambert E, Vandeputte A, Brodin P, Mendes T, Lambert JC, et al.
Current protocols (2023) 310: e904. . **ICC; tested species: rat**

Development and cadherin-mediated control of prefrontal corticostriatal projections in mice.
Mesías RE, Zaki Y, Guevara CA, Friedman LG, Hussein A, Therrien K, Magee AR, Tzavaras N, Del Valle P, Baxter MG, Huntley GW, et al.
iScience (2023) 2610: 108002. . **IHC; tested species: mouse**

Neuronopathic GBA1L444P Mutation Accelerates Glucosylsphingosine Levels and Formation of Hippocampal Alpha-Synuclein Inclusions.
Mahoney-Crane CL, Viswanathan M, Russell D, Curtiss RAC, Freire J, Bobba SS, Coyle SD, Kandebo M, Yao L, Wan BL, Hatcher NG, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 433: 501-521. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/160006 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.