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 (FFPE)**: 1 : 500 **ExM**: external data (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 applied and published for this method by customers (see application-specific references).

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, EXM; tested species: mouse**

Early α-synuclein aggregation decreases corticostriatal glutamate drive and synapse density.
Brzozowski CF, Challa H, Gcwensa NZ, Hall D, Nabert D, Chambers N, Gallardo I, Millet M, Volpicelli-Daley L, Moehle MS
Neurobiology of disease (2025) 210: 106918. . **WB, IHC_FR, 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**

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**

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**

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**

Panacis Quinquefolii Radix Polysaccharides Alleviate Depressive-Like Behaviors in Chronic Unpredictable Mild Stress-Induced Mice by Suppressing Complement C1Q/C3-Mediated Microglial Synaptic Pruning and Modulating Gut Microbiota.
Xie M, Feng L, Li R, Li M, Shen L, Zhang M, Wei Y, Yin Q, Wang D, Chen L, Song K, et al.
CNS neuroscience & therapeutics (2026) 324: e70859. . **IHC; tested species: mouse**

Blocking microglial reactivity via purinergic receptors prevents subacute cognitive deficits after TIA.
Llovera G, Heindl S, Varga DP, Lenart N, Kallabis S, Göb V, Stegner D, Escaig R, Nicolai L, Franzmeier N, Meissner F, et al.
EMBO molecular medicine (2026) : . . **IHC; tested species: mouse**

Charting the nanotopography of inner hair cell synapses using MINFLUX nanoscopy.
Kapoor R, Kim H, Garlick E, Lima MADRBF, Esch K, Ruhwedel T, Möbius W, Wolf F, Moser T
Science advances (2025) 1145: eady4344. . **IHC; tested species: mouse**

Cationic peptides cause memory loss through endophilin-mediated endocytosis.
Stokes EG, Vasquez JJ, Azouz G, Nguyen M, Tierno A, Zhuang Y, Galinato VM, Hui M, Toledano M, Tyler I, Shi X, et al.
Nature (2025) 6388050: 479-489. . **ICC; tested species: mouse**

Glutamatergic argonaute2 promotes the formation of the neurovascular unit in mice.
Sona C, Yeh YT, Li Y, Liu X, Ghosh A, Hinte LC, Ku MC, Rathjen T, Niendorf T, Yu G, Jia S, et al.
Science signaling (2025) 18875: eadl6745. . **IHC; tested species: mouse**

Isotope-encoded spatial biology identifies plaque-age-dependent maturation and synaptic loss in an Alzheimer's disease mouse model.
Wood JI, Dulewicz M, Szadziewska A, Weiner S, Ge J, Stringer K, Desai S, Fenson L, Piotrowska D, Brinkmalm G, Koutarapu S, et al.
Nature communications (2025) 161: 8170. . **IHC; 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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.