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**: 1 : 500 **IHC-P (FFPE)**: 1 : 500 **ExM**: external data (see remarks)
Immunogen	Recombinant protein corresponding to the N-terminal half of human Homer1 (UniProt Id: Q86YM7)
Reactivity	Reacts with: human (Q86YM7), rat (Q9Z214), mouse (Q9Z2Y3). Other species not tested yet.
Specificity	Specific for Homer1. Cross-reactivity of the serum to Homer2 and 3 was removed by pre-adsorption with Homer2 (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**: 4% formaldehyde/PFA fixation is recommended. The following fixatives are not advised: methanol. **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 160 002

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**

Development of visual-stimulus reversal learning-memory in mice is dependent on social interaction.
Wicki S, Canziani A, Poggi G, Argunşah AÖ, Karayannis T, Pryce CR
iScience (2026) 293: 114864. . **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**

Selective regulation of corticostriatal synapses by astrocytic phagocytosis.
Kim JY, Kim H, Chung WS, Park H
Nature communications (2025) 161: 2504. . **IHC; tested species: mouse**

Gating of hair cell Ca2+ channels governs the activity of cochlear neurons.
Karagulyan N, Thirumalai A, Michanski S, Qi Y, Fang Q, Wang H, Ortner NJ, Striessnig J, Strenzke N, Wichmann C, Hua Y, et al.
Science advances (2025) 1125: eadu7898. . **IHC; tested species: mouse**

Psychedelic control of neuroimmune interactions governing fear.
Chung EN, Lee J, Polonio CM, Choi J, Akl CF, Kilian M, Weiß WM, Gunner G, Ye M, Heo TH, Drake SS, et al.
Nature (2025) 6418065: 1276-1286. . **IHC; tested species: mouse**

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 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.