SYSY Antibodies

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Homer1

Cat.No. 160 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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 : 100 up to 1 : 500 **IHC**: not recommended **IHC-P (FFPE)**: not recommended **ExM**: external data (see remarks) **DNA-PAINT**: external data (see remarks) **EM**: external data (see remarks) **ELISA**: yes (see remarks)
Clone	2G8
Subtype	IgG1 (κ light chain)
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). **DNA-PAINT**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **EM**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as capture antibody for sandwich-ELISA. Please refer to the protocol for suitable detector antibodies.

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 160 011

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**

Mutations in the transcriptional regulator MeCP2 severely impact key cellular and molecular signatures of human astrocytes during maturation.
Sun J, Osenberg S, Irwin A, Ma LH, Lee N, Xiang Y, Li F, Wan YW, Park IH, Maletic-Savatic M, Ballas N, et al.
Cell reports (2023) 421: 111942. . **ICC, IHC; tested species: human**

SLC13A5/sodium-citrate co-transporter overexpression causes disrupted white matter integrity and an autistic-like phenotype.
Rigby MJ, Orefice NS, Lawton AJ, Ma M, Shapiro SL, Yi SY, Dieterich IA, Frelka A, Miles HN, Pearce RA, Yu JPJ, et al.
Brain communications (2022) 41: fcac002. . **WB, ICC; tested species: mouse**

Human cerebral organoids model tumor initiation and infiltration in an autologous astrocyte-supported setting.
Schickel E, Bender T, Kaysan L, Hufgard S, Mayer M, Grosshans DR, Thielemann C, Schroeder IS
iScience (2025) 289: 113334. . **ICC, IHC; tested species: human**

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**

Vesicular Glutamate Release from Feeder-FreehiPSC-Derived Neurons.
Baldassari S, Cervetto C, Amato S, Fruscione F, Balagura G, Pelassa S, Musante I, Iacomino M, Traverso M, Corradi A, Scudieri P, et al.
International journal of molecular sciences (2022) 2318: . . **WB, ICC; tested species: human**

Selective endocytosis of Ca2+-permeable AMPARs by the Alzheimer's disease risk factor CALM bidirectionally controls synaptic plasticity.
Azarnia Tehran D, Kochlamazashvili G, Pampaloni NP, Sposini S, Shergill JK, Lehmann M, Pashkova N, Schmidt C, Löwe D, Napieczynska H, Heuser A, et al.
Science advances (2022) 821: eabl5032. . **WB, ICC; tested species: mouse**

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

Astrocytic cathepsin D promotes α-synuclein processing and Lewy neurite-like aggregate maturation.
Hanafusa H, Ohashi K, Shojima H, Honda Y, Hisamoto N, Kameyama T, Miyata M, Mizutani K, Takai Y, Matsumoto K
EMBO reports (2026) : . . **ICC; tested species: mouse**

Trans-dimerization of Amyloid Precursor Protein Family Members Induces Pre- and Postsynaptic Differentiation through Distinct Signaling Pathways.
Rajender R, Foth N, Eggert S, Schilling S, Fäßler M, Ott C, Mühlhaus T, Sommer F, Schroda M, Maritzen T, Banicevic M, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2026) 4629: . . **ICC; tested species: human**

CSF1R inhibition exacerbates gamma oscillation disruption and induces network hyperexcitability in APP/PS1 mice.
Delaney HJ, Islam S, Healy D, Oglesby R, Konda M, Rietman GM, Lynch R, Nazmi A, Murray JT, Cunningham MO, Cunningham C, et al.
Brain : a journal of neurology (2026) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/160011 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.