SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Homer1

Cat.No. 160 008; Recombinant rabbit antibody, 50 µg recombinant IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg purified recombinant IgG, lyophilized. 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 **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet **ExM**: external data (see remarks)
Clone	Rb2G8
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to the N-terminal half of human Homer 1 (UniProt Id: Q86YM7)
Reactivity	Reacts with: rat (Q9Z214), mouse (Q9Z2Y3), human (Q86YM7). 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	This antibody is a chimeric antibody based on the well known monoclonal mouse antibody clone 2G8. The constant regions of the heavy and light chains have been replaced by rabbit specific sequences. Therefore, the antibody can be used with standard anti-rabbit secondary reagents. The antibody has been expressed in mammalian cells. **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 160 008

A novel synaptopathy-defective synaptic vesicle protein trafficking in the mutant CHMP2B mouse model of frontotemporal dementia.
Clayton EL, Bonnycastle K, Isaacs AM, Cousin MA, Schorge S
Journal of neurochemistry (2022) 1603: 412-425. . **WB; tested species: mouse**

Selected General References

Surface clustering of metabotropic glutamate receptor 1 induced by long Homer proteins.
Kammermeier PJ et al. BMC Neurosci (2006) PubMed:16393337

Homer 1a enhances spike-induced calcium influx via L-type calcium channels in neocortex pyramidal cells.
Yamamoto K et al. Eur. J. Neurosci. (2005) PubMed:16190889

Differential expression of Homer family proteins in the developing mouse brain.
Shiraishi Y et al. J. Comp. Neurol. (2004) PubMed:15116392

Modulation of synaptic signalling complexes by Homer proteins.
Thomas U et al. J. Neurochem. (2002) PubMed:12065649

Homer-dependent cell surface expression of metabotropic glutamate receptor type 5 in neurons.
Ango F et al. Mol. Cell. Neurosci. (2002) PubMed:12093163

An N-terminal sequence specific for a novel Homer1 isoform controls trafficking of group I metabotropic glutamate receptor in mammalian cells.
Saito H et al. Biochem. Biophys. Res. Commun. (2002) PubMed:12176012

Regulation of dendritic spine morphology and synaptic function by Shank and Homer.
Sala C et al. Neuron (2001) PubMed:11498055

Homer-1c/Vesl-1L modulates the cell surface targeting of metabotropic glutamate receptor type 1alpha: evidence for an anchoring function.
Ciruela F et al. Mol. Cell. Neurosci. (2000) PubMed:10662504

Homer: a link between neural activity and glutamate receptor function.
Xiao B et al. Curr. Opin. Neurobiol. (2000) PubMed:10851183

Molecular characterisation of two structurally distinct groups of human homers, generated by extensive alternative splicing.
Soloviev MM et al. J. Mol. Biol. (2000) PubMed:10653696

Coupling of mGluR/Homer and PSD-95 complexes by the Shank family of postsynaptic density proteins.
Tu JC et al. Neuron (1999) PubMed:10433269

Homer: a protein that selectively binds metabotropic glutamate receptors.
Brakeman PR et al. Nature (1997) PubMed:9069287

Access the online factsheet including applicable protocols at https://sysy.com/product/160008 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.