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

Homer1a

Cat.No. 160 013; Polyclonal rabbit 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**: not tested yet **IHC**: not recommended **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 180 to 186 from rat Homer1a (Q9Z214-3) (UniProt Id: Q9Z214-3)
Reactivity	Reacts with: rat (Q9Z214-3), mouse. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for homer 1a.

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 160 013

Overexpression of Homer1a in the basal and lateral amygdala impairs fear conditioning and induces an autism-like social impairment.
Banerjee A, Luong JA, Ho A, Saib AO, Ploski JE
Molecular autism (2016) 7: 16. . **WB**

Neuroprotective efficacy of different levels of high-frequency repetitive transcranial magnetic stimulation in mice with CUMS-induced depression: Involvement of the p11/BDNF/Homer1a signaling pathway.
Zuo C, Cao H, Ding F, Zhao J, Huang Y, Li G, Huang S, Jiang H, Jiang Y, Wang F
Journal of psychiatric research (2020) 125: 152-163. . **WB; tested species: mouse**

Neurobiological substrates of persistent working memory deficits and cocaine-seeking in the prelimbic cortex of rats with a history of extended access to cocaine self-administration.
Gobin C, Shallcross J, Schwendt M
Neurobiology of learning and memory (2019) : . . **WB; tested species: rat**

A Simple DMSO-Based Method for Cryopreservation of Primary Hippocampal and Cortical Neurons.
Ishizuka Y, Bramham CR
Journal of neuroscience methods (2019) : 108578. . **WB; tested species: rat**

Kainic acid-induced status epilepticus decreases mGlu5 receptor and phase-specifically downregulates Homer1b/c expression.
Crans RAJ, Daelemans S, Raedt R, Ciruela F, Stove CP
Brain research (2019) : 146640. . **WB; tested species: rat**

Homer1a drives homeostatic scaling-down of excitatory synapses during sleep.
Diering GH, Nirujogi RS, Roth RH, Worley PF, Pandey A, Huganir RL
Science (New York, N.Y.) (2017) 3556324: 511-515. . **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

Access the online factsheet including applicable protocols at https://sysy.com/product/160013 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.