

## Homer1

Cat.No. 160 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O, 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> 1 : 200 up to 1 : 500 <b>IHC:</b> 1 : 200 up to 1 : 500 <b>IHC_P:</b> 1 : 500
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 <a href="#">Soloviev</a> et al. (2000), aa 1 - 180 are present in isoforms a, b, c and d.
Matching control	160-0P

**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 160 004

- Syndapin I Loss-of-Function in Mice Leads to Schizophrenia-Like Symptoms.  
Koch N, Koch D, Krueger S, Tröger J, Sabanov V, Ahmed T, McMillan LE, Wolf D, Montag D, Kessels MM, Balschun D, et al. Cerebral cortex (New York, N.Y. : 1991) (2020) : . . **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**
- Iterative expansion microscopy.  
Chang JB, Chen F, Yoon YG, Jung EE, Babcock H, Kang JS, Asano S, Suk HJ, Pak N, Tillberg PW, Wassie AT, et al. Nature methods (2017) 146: 593-599. . **IHC; tested species: mouse**
- EHBP1 Is Critically Involved in the Dendritic Arbor Formation and Is Coupled to Factors Promoting Actin Filament Formation.  
Ji Y, Izadi-Seitz M, Landmann A, Schwintzer L, Qualmann B, Kessels MM  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 446: . . **WB; tested species: rat**
- Coordinated neurostimulation promotes circuit rewiring and unlocks recovery after spinal cord injury.  
Van Steenberghe V, Burattini L, Trumpp M, Fourneau J, Aljović A, Chahin M, Oh H, D'Ambra M, Bareyre FM  
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- Neurofilament Levels in Dendritic Spines Associate with Synaptic Status.  
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Cells (2023) 126: . . **ICC; tested species: rat**
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- Plasticity-Related Gene 5 Is Expressed in a Late Phase of Neurodifferentiation After Neuronal Cell-Fate Determination.  
Gross I, Brandt N, Vonk D, Köper F, Wöhlbrand L, Rabus R, Witt M, Heep A, Plösch T, Hipp MS, Bräuer AU, et al. Frontiers in cellular neuroscience (2022) 16: 797588. . **ICC; tested species: mouse**
- MAD2B promotes podocyte injury through regulating Numb-dependent Notch 1 pathway in diabetic nephropathy.  
Li MR, Lei CT, Tang H, Yin XJ, Hao Z, Qiu Y, Xie YR, Zeng JY, Su H, Zhang C  
International journal of biological sciences (2022) 185: 1896-1911. . **ICC; tested species: rat**
- The synaptic scaffold protein MPP2 interacts with GABAA receptors at the periphery of the postsynaptic density of glutamatergic synapses.  
Schmerl B, Gimber N, Kuropka B, Stumpf A, Rentsch J, Kunde SA, von Sivers J, Ewers H, Schmitz D, Freund C, Schmoranz J, et al. PLoS biology (2022) 203: e3001503. . **ICC; tested species: rat**
- SHANK2 Mutations Result in Dysregulation of the ERK1/2 Pathway in Human Induced Pluripotent Stem Cells-Derived Neurons and Shank2(-/-) Mice.  
Lutz AK, Pérez Arévalo A, Ioannidis V, Stirmlinger N, Demestre M, Delorme R, Bourgeron T, Boeckers TM  
Frontiers in molecular neuroscience (2021) 14: 773571. . **ICC; tested species: human**

Access the online factsheet including applicable protocols  
at <https://sysy.com/product/160004> or scan the QR-code.



## FAQ - How should I store my antibody?

### Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

### Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

### Product Specific Hints for Storage

#### Control proteins / peptides

- Store at -20°C to -80°C.

#### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

## Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.