

## Homer 1

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 <sub>2</sub> O, then aliquot and store at -20°C until use.   |
| Applications            | <b>WB:</b> 1 : 1000 (AP staining)<br><b>IP:</b> yes<br><b>ICC:</b> 1 : 500 up to 1 : 1000 (see remarks)<br><b>IHC:</b> yes<br><b>IHC-P/FFPE:</b> 1 : 500  |
| Immunogen               | Recombinant protein corresponding to AA 1 to 196 from human Homer1 (UniProt Id: Q86YM7)   |
| Reactivity              | Reacts with: human (Q86YM7), rat (Q9Z214), mouse (Q9Z2Y3). Other species not tested yet.  |
| Specificity             | Specific for Homer 1. Cross-reactivity of the serum to Homer 2 and 3 was removed by pre-adsorption with Homer 2 (aa 1 - 176) and Homer 3 (aa 1 - 177). According to <a href="#">Solovief</a> et al. (2000), aa 1 - 180 are present in isoforms a, b, c and d. |
| matching control        | 160-0P  |
| Remarks                 | <b>ICC:</b> PFA fixation is recommended.<br><b>Methanol fixation leads to a complete loss of the signal.</b>  |

### TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

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 SY SY Antibodies

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**

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**

Dorsal Horn Gastrin-Releasing Peptide Expressing Neurons Transmit Spinal Itch But Not Pain Signals.  
 Albisetti GW, Pagani M, Platonova E, Hösl I, Johannsson HC, Fritschy JM, Wildner H, Zeilhofer HU  
*The Journal of neuroscience : the official journal of the Society for Neuroscience* (2019) : . **IHC; tested species: mouse**  
 APC2 controls dendrite development by promoting microtubule dynamics.  
 Kahn Ol, Schätzle P, van de Willige D, Tas RP, Lindhout FW, Portegies S, Kapitein LC, Hoogenraad CC  
*Nature communications* (2018) 9(1): 2773. **ICC; tested species: rat**

Differential a2A- and a2C-adrenoceptor protein expression in presynaptic and postsynaptic density fractions of postmortem human prefrontal cortex.  
 Erdozain AM, Brocos-Mosquera I, Gabilondo AM, Meana JJ, Callado LF  
*Journal of psychopharmacology (Oxford, England)* (2018) : 269881118798612. **WB; tested species: human**  
 Activity-Dependent Gating of Parvalbumin Interneuron Function by the Perineuronal Net Protein Brevican.  
 Favuzzi E, Marques-Smith A, Deogracias R, Winterlood CM, Sánchez-Aguilera A, Mantoan L, Maeso P, Fernandes C, Ewers H, Rico B  
*Neuron* (2017) 95(3): 639-655.e10. **IHC; tested species: mouse**

Identification of Two Classes of Somatosensory Neurons That Display Resistance to Retrograde Infection by Rabies Virus.  
 Albisetti GW, Ghaneam A, Foster E, Conzelmann KK, Zeilhofer HU, Wildner H  
*The Journal of neuroscience : the official journal of the Society for Neuroscience* (2017) 37(43): 10358-10371. **IHC; tested species: mouse**

Altered postsynaptic-density-levels of caldendrin in the para-chloroamphetamine-induced serotonin syndrome but not in the rat ketamine model of psychosis.  
 Smalla KH, Sahin J, Putzke J, Tischmeyer W, Gundelfinger ED, Kreutz MR  
*Neurochemical research* (2009) 34(8): 1405-9. **WB**

### Selected General References

Surface clustering of metabotropic glutamate receptor 1 induced by long Homer proteins.  
 Kammermeier PJ  
*BMC neuroscience* (2006) 7: 1.

Homer 1a enhances spike-induced calcium influx via L-type calcium channels in neocortex pyramidal cells.  
 Yamamoto K, Sakagami Y, Sugiura S, Inokuchi K, Shimohama S, Kato N  
*The European journal of neuroscience* (2005) 22(6): 1338-48.

Differential expression of Homer family proteins in the developing mouse brain.  
 Shiraiishi Y, Mizutani A, Yuasa S, Mikoshiba K, Furuiichi T  
*The Journal of comparative neurology* (2004) 473(4): 582-99.

Modulation of synaptic signalling complexes by Homer proteins.  
 Thomas U  
*Journal of neurochemistry* (2002) 81(3): 407-13.

Homer-dependent cell surface expression of metabotropic glutamate receptor type 5 in neurons.  
 Ango F, Robbe D, Tu JC, Xiao B, Worley PF, Pin JP, Bockaert J, Fagni L  
*Molecular and cellular neurosciences* (2002) 20(2): 323-9.

An N-terminal sequence specific for a novel Homer1 isoform controls trafficking of group I metabotropic glutamate receptor in mammalian cells.  
 Saito H, Kimura M, Inanobe A, Ohe T, Kurachi Y  
*Biochemical and biophysical research communications* (2002) 296(3): 523-9.

Regulation of dendritic spine morphology and synaptic function by Shank and Homer.  
 Sala C, Piéch V, Wilson NR, Passafaro M, Liu G, Sheng M  
*Neuron* (2001) 31(1): 115-30.

Homer-1c/Vesl-1L modulates the cell surface targeting of metabotropic glutamate receptor type 1alpha: evidence for an anchoring function.  
 Ciruela F, Solovief MM, Chan WY, McIlhinney RA  
*Molecular and cellular neurosciences* (2000) 15(1): 36-50.