

Homer 1

Cat.No. 160 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 up to 1 : 1000 (see remarks) IHC: 1 : 200 IHC-P/FFPE: 1 : 500 ELISA: yes (see remarks)
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). The Homer 1-sp
matching control	160-0P
Remarks	ICC: PFA fixation recommended. Methanol fixation leads to a complete loss of the signal. ELISA: Suitable as detector antibody for sandwich-ELISA with cat. no. 160 011 as capture antibody (protocol for sandwich-ELISA).

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

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; 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) 355(6324): 511-515. **WB, IP; tested species: mouse**

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) 14(6): 593-599. **IHC; tested species: mouse**

Effects of erythropoietin in murine-induced pluripotent cell-derived panneuronal progenitor cells.
 Offen N, Flemming J, Kamawal H, Ahmad R, Wolber W, Geis C, Zehres H, Schöler HR, Ehrenreich H, Müller AM, Sirén AL, et al.
Molecular medicine (Cambridge, Mass.) (2013) 19: 399-408. **ICC; tested species: mouse**

Neuronal KIF5b deletion induces striatum-dependent locomotor impairments and defects in membrane presentation of dopamine D2 receptors.
 Cromberg LE, Saez TMM, Otero MG, Tomasella E, Alloatti M, Damianich A, Devoto VP, Ferrario J, Gelman D, Rubinstein M, Falzone TL, et al.
Journal of neurochemistry (2019) : . **WB; tested species: human**

A Method to Visualize the Nanoscopic Morphology of Astrocytes In Vitro and In Situ.
 Heller JP, Rusakov DA
Methods in molecular biology (Clifton, N.J.) (2019) 1938: 69-84. **ICC; tested species: rat**

A practical guide to optimization in X10 expansion microscopy.
 Truckenbrodt S, Sommer C, Rizzoli SO, Danzl JG
Nature protocols (2019) : . **ICC; tested species: rat**

CD47 Protects Synapses from Excess Microglia-Mediated Pruning during Development.
 Lehrman EK, Wilton DK, Litvina EY, Welsh CA, Chang ST, Frouni A, Walker AJ, Heller MD, Umemori H, Chen C, Stevens B, et al.
Neuron (2018) 100(1): 120-134.e6. **ICC; tested species: mouse**

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 Rosenzweig ES, Brock JH, Lu P, Kumamaru H, Salegio EA, Kadoya K, Weber JL, Liang JJ, Moseanko R, Hawbecker S, Huie JR, et al.
Nature medicine (2018) : . **ICC; tested species: human**

$\text{A}\beta$ mediates F-actin disassembly in dendritic spines leading to cognitive deficits in Alzheimer's disease.
 Komaddi RP, Das D, Karunakaran S, Nanguneri S, Bapat D, Ray A, Shaw E, Bennett DA, Nair D, Ravindranath V
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 38(5): 1085-1099. **ICC; tested species: mouse**

Mapping molecular assemblies with fluorescence microscopy and object-based spatial statistics.
 Lagache T, Grassart A, Dallongeville S, Faklaris O, Sauvionnet N, Dufour A, Danglot L, Olivo-Marin JC
Nature communications (2018) 9(1): 698. **ICC; tested species: mouse**

The presynaptic ribbon maintains vesicle populations at the hair cell afferent fiber synapse.
 Becker L, Schnee ME, Niwa M, Sun W, Maxeiner S, Talaei S, Kachar B, Rutherford MA, Ricci AJ
eLife (2018) 7: . **ICC**

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 Aguayo FI, Tejos-Bravo M, Díaz-Véliz G, Pacheco A, García-Rojo G, Corrales W, Olave FA, Aliaga E, Ulloa JL, Avalos AM, Román-Albásini L, et al.
Frontiers in molecular neuroscience (2018) 11: 283. **WB; tested species: rat**

Enhancing Oligodendrocyte Myelination Rescues Synaptic Loss and Improves Functional Recovery after Chronic Hypoxia.
 Wang F, Yang YJ, Yang N, Chen XJ, Huang NX, Zhang J, Wu Y, Liu Z, Gao X, Li T, Pan GQ, et al.
Neuron (2018) 99(4): 689-701.e5. **ICC; tested species: mouse**

The Cellular and Synaptic Architecture of the Mechanosensory Dorsal Horn.
 Abraira VE, Kuehn ED, Chirila AM, Springel MW, Toliver AA, Zimmerman AL, Orefice LL, Boyle KA, Bai L, Song BJ, Bashista KA, et al.
Cell (2017) 168(1-2): 295-310.e19. **ICC; tested species: mouse**

Aberrant neuronal activity-induced signaling and gene expression in a mouse model of RASopathy.
 Altmüller F, Pothula S, Annamneedi A, Nakhai-Rad S, Montenegro-Venegas C, Pina-Fernández E, Marini C, Santos M, Schanze D, Montag D, Ahmadian MR, et al.
PLoS genetics (2017) 13(3): e1006684. **ICC**

Hallmarks of Alzheimer's Disease in Stem-Cell-Derived Human Neurons Transplanted into Mouse Brain.
 Espuny-Camacho I, Arranz AM, Fiers M, Snellinx A, Ando K, Munck S, Bonnefont J, Lambot L, Corthout N, Omodho L, Vanden Eynden E, et al.
Neuron (2017) 93(5): 1066-1081.e8. **IHC; tested species: human, mouse**