

# Homer (E-18): sc-8921

## BACKGROUND

Homer (also designated Ves1, for VASP/ENA-related gene upregulated during seizure and LTP) family proteins are immediate early gene products that bind to group 1 metabotropic glutamate receptors (mGluRs), proteins involved in triggering intracellular calcium release. Unlike Homer-1a, the prototype member of the Homer family, other Homer family members (Homer-1b and -1c, Homer-2a, -2b and -2c, and Homer-3) are constitutively expressed and contain a coiled-coil (CC) domain that mediates self-multimerization. Homer-1a is enriched at excitatory synapses, does not multimerize and appears to block the association of mGluRs to CC-Homer proteins. Homer proteins have also been shown to link mGluRs with the inositol triphosphate receptors (IP3R).

## REFERENCES

1. Brakeman, P.R., et al. 1997. Homer: a protein that selectively binds metabotropic glutamate receptors. *Nature* 386: 284-288.
2. Kato, A., et al. 1997. Ves1, a gene encoding VASP/ENA family related protein, is upregulated during seizure, long-term potentiation and synaptogenesis. *FEBS Lett.* 412: 183-189.
3. Kato, A., et al. 1998. Novel members of the Ves1/Homer family of PDZ proteins that bind metabotropic glutamate receptors. *J. Biol. Chem.* 273: 23969-23975.
4. Xiao, B., et al. 1998. Homer regulates the association of group 1 metabotropic glutamate receptors with multivalent complexes of homer-related, synaptic proteins. *Neuron* 21: 707-716.
5. Tu, J.C., et al. 1998. Homer binds a novel proline-rich motif and links group 1 metabotropic glutamate receptors with IP3 receptors. *Neuron* 21: 717-726.
6. Soloviev, M.M., et al. 2000. Molecular characterisation of two structurally distinct groups of human homers, generated by extensive alternative splicing. *J. Mol. Biol.* 295:1185-1200.
7. Soloviev, M.M., et al. 2000. Mouse brain and muscle tissues constitutively express high levels of Homer proteins. *Eur. J. Biochem.* 267: 634-639.

## SOURCE

Homer (E-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Homer of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8921 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

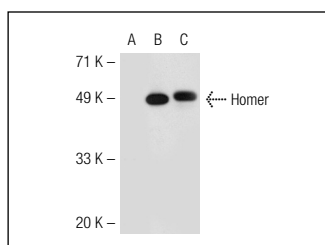
Homer (E-18) is recommended for detection of all Homer isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Homer (E-18) is also recommended for detection of all Homer isoforms in additional species, including equine, canine, bovine, porcine and avian.

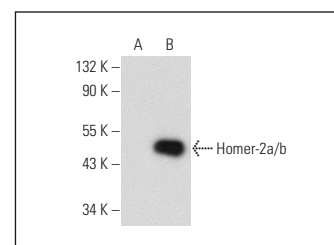
Molecular Weight of Homer: 45 kDa.

Positive Controls: Homer (h): 293 Lysate: sc-113176, mouse brain extract: sc-2253 or IMR-32 cell lysate: sc-2409.

## DATA



Homer (E-18): sc-8921. Western blot analysis of Homer expression in non-transfected: sc-110760 (A) and human Homer transfected: sc-113176 (B) 293 whole cell lysates and mouse brain tissue extract (C).



Homer (E-18): sc-8921. Western blot analysis of Homer-2a/b expression in non-transfected: sc-11752 (A) and human Homer-2a/b transfected: sc-176532 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Dziedzic, B., et al. 2003. Neuron-to-glia signaling mediated by excitatory amino acid receptors regulates ErbB receptor function in astroglial cells of the neuroendocrine brain. *J. Neurosci.* 23: 915-926.
2. Girard, B.M., et al. 2004. Pituitary adenylate cyclase activating polypeptide and PAC1 receptor signaling increase Homer 1a expression in central and peripheral neurons. *Regul. Pept.* 123: 107-116.
3. Calo, L., et al. 2005. Interactions between ephrin-B and metabotropic glutamate 1 receptors in brain tissue and cultured neurons. *J. Neurosci.* 25: 2245-2254.
4. Kato, H.K., et al. 2012. Functional coupling of the metabotropic glutamate receptor, InsP3 receptor and L-type Ca<sup>2+</sup> channel in mouse CA1 pyramidal cells. *J. Physiol.* 590: 3019-3034.
5. Haas, L.T., et al. 2015. Metabotropic glutamate receptor 5 couples cellular prion protein to intracellular signalling in Alzheimer's disease. *Brain* 139: 526-546.



Try **Homer (D-3): sc-17842** or **Homer-1b/c (B-5): sc-25271**, our highly recommended monoclonal alternatives to Homer (E-18). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Homer (D-3): sc-17842**.