

Homer-1a (M-13): sc-8922

BACKGROUND

Homer family proteins, also designated Vesl (for VASP/Ena-related gene upregulated during seizure) and LTP, 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. Vesl, a gene encoding VASP/Ena family related protein, is upregulated during seizure, long-term potentiation and synaptogenesis. *FEBS Lett.* 412: 183-189.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: Homer1 (mouse) mapping to 13 C3.

SOURCE

Homer-1a (M-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Homer-1a 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-8922 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Homer-1a (M-13) is recommended for detection of Homer-1a of mouse and rat 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).

Suitable for use as control antibody for Homer-1 siRNA (h): sc-35581, Homer-1 shRNA Plasmid (h): sc-35581-SH and Homer-1 shRNA (h) Lentiviral Particles: sc-35581-V.

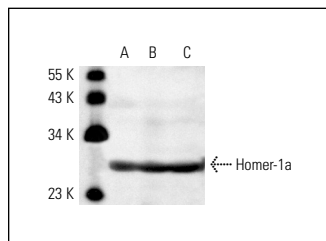
Molecular Weight of Homer-1a: 30 kDa.

Positive Controls: mouse cerebellum extract: sc-2403, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

STORAGE

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

DATA



Homer-1a (M-13): sc-8922. Western blot analysis of Homer-1a expression in mouse cerebellum (A), rat brain (B) and mouse brain (C) extracts.

SELECT PRODUCT CITATIONS

1. Girard, B.M., et al. 2004. Pituitary adenylate cyclase activating polypeptide and PAC-1 receptor signaling increase Homer-1a expression in central and peripheral neurons. *Regul. Pept.* 123: 107-116.
2. Giuffrida, R., et al. 2005. A reduced number of metabotropic glutamate subtype 5 receptors are associated with constitutive Homer proteins in a mouse model of fragile X syndrome. *J. Neurosci.* 25: 8908-8916.
3. Stokely, M.E., et al. 2006. Polycystin-1 can interact with homer 1/Vesl-1 in postnatal hippocampal neurons. *J. Neurosci. Res.* 84: 1727-1737.
4. Tappe, A., et al. 2006. Synaptic scaffolding protein Homer-1a protects against chronic inflammatory pain. *Nat. Med.* 12: 677-681.
5. Bortoloso, E., et al. 2006. Transition of Homer isoforms during skeletal muscle regeneration. *Am. J. Physiol., Cell Physiol.* 290: C711-C718.
6. Kirschstein, T., et al. 2007. Loss of metabotropic glutamate receptor-dependent long-term depression via downregulation of mGluR-5 after status epilepticus. *J. Neurosci.* 27: 7696-7704.
7. Mackiewicz, M., et al. 2008. Analysis of the QTL for sleep homeostasis in mice: Homer1a is a likely candidate. *Physiol. Genomics* 33: 91-99.
8. Sun, P., et al. 2011. Increase in cortical pyramidal cell excitability accompanies depression-like behavior in mice: a transcranial magnetic stimulation study. *J. Neurosci.* 31: 16464-16472.
9. Kaja, S., et al. 2013. Homer-1a immediate early gene expression correlates with better cognitive performance in aging. *Age* 35: 1799-1808.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.