

Homer-1b/c (B-5): sc-25271

BACKGROUND

Homer family proteins, also designated Ves1 (for VASP/Ena-related gene up-regulated 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: HOMER1 (human) mapping to 5q14.1; Homer1 (mouse) mapping to 13 C3.

SOURCE

Homer-1b/c (B-5) is a mouse monoclonal antibody epitope corresponding to amino acids 181-354 of Homer-1b of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Homer-1b/c (B-5) is recommended for detection of Homer-1b and Homer-1c of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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), immunohistochemistry (including paraffin-embedded sections) (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 siRNA (m): sc-35582, Homer-1 shRNA Plasmid (h): sc-35581-SH, Homer-1 shRNA Plasmid (m): sc-35582-SH, Homer-1 shRNA (h) Lentiviral Particles: sc-35581-V and Homer-1 shRNA (m) Lentiviral Particles: sc-35582-V.

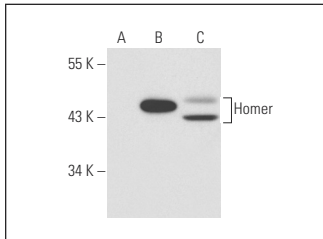
Molecular Weight of Homer-1b/c: 45 kDa.

Positive Controls: Homer (h): 293 Lysate: sc-113176, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

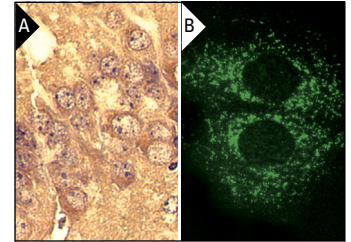
STORAGE

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

DATA



Homer-1b/c (B-5): sc-25271. 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-1b/c (B-5): sc-25271. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic localization (A). Immunofluorescence staining of methanol-fixed A-10 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Jiang, H.Z., et al. 2016. Downregulation of Homer-1b/c in SOD1 G93A models of ALS: a novel mechanism of neuroprotective effect of lithium and valproic acid. *Int. J. Mol. Sci.* 17: 2129.
2. Harony-Nicolas, H., et al. 2017. Oxytocin improves behavioral and electrophysiological deficits in a novel Shank3-deficient rat. *Elife* 6: e18904.
3. Buscemi, L., et al. 2017. Homer-1 scaffold proteins govern Ca²⁺ dynamics in normal and reactive astrocytes. *Cereb. Cortex* 27: 2365-2384.
4. Domise, M., et al. 2019. Neuronal AMP-activated protein kinase hyperactivation induces synaptic loss by an autophagy-mediated process. *Cell Death Dis.* 10: 221.
5. Brancato, A., et al. 2020. *In utero* Δ9-tetrahydrocannabinol exposure confers vulnerability towards cognitive impairments and alcohol drinking in the adolescent offspring: is there a role for neuropeptide Y? *J. Psychopharmacol.* 34: 663-679.
6. Yoon, S., et al. 2021. Homer-1 promotes dendritic spine growth through ankyrin-G and its loss reshapes the synaptic proteome. *Mol. Psychiatry* 26: 1775-1789.
7. Urdániz-Casado, A., et al. 2021. Gender-dependent deregulation of linear and circular RNA variants of HOMER1 in the entorhinal cortex of Alzheimer's disease. *Int. J. Mol. Sci.* 22: 9205.

RESEARCH USE

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



See **Homer (D-3): sc-17842** for Homer antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.