

PSD-95 (4E181): sc-71937

BACKGROUND

The *Drosophila* discs large (dlg) tumor suppressor gene was first identified in *Drosophila* through genetic analysis of germline mutations. Several mammalian homologs were subsequently identified and categorized into a protein family termed MAGUK (membrane-associated guanylate kinase homolog). Human homologs of dlg include hdlg-1 (rat SAP 97) and NE-dlg (neuronal and endocrine dlg). The rat synaptic protein PSD-95 (also designated SAP 90) also shares homology with these proteins. MAGUKs are localized at the membrane-cytoskeleton interface and contain several distinct domains which suggest a role for these proteins in intracellular signal transduction. Interaction of hdlg-1 and NE-dlg with the tumor suppressor protein APC suggest that MAGUK proteins may also play a role in regulation of growth.

REFERENCES

1. Gateff, E., et al. 1989. Tumor-suppressor genes of *Drosophila melanogaster*. Crit. Rev. Oncog. 1: 221-245.
2. Cho, K.O., et al. 1992. The rat brain postsynaptic density fraction contains a homolog of the *Drosophila* discs-large tumor suppressor protein. Neuron 9: 929-942.
3. Stehle, T., et al. 1992. Refined structure of the complex between guanylate kinase and its substrate GMP at 2.0 Å resolution. J. Mol. Biol. 224: 1127-1141.
4. Woods, D.F., et al. 1993. ZO-1, DlgA and PSD-95/SAP 90: homologous proteins in tight, septate and synaptic cell junctions. Mech. Dev. 44: 85-89.
5. Lue, R.A., et al. 1994. Cloning and characterization of hdlg: the human homologue of the *Drosophila* discs large tumor suppressor binds to protein 4.1. Proc. Natl. Acad. Sci. USA 91: 9818-9822.
6. Muller, B.M., et al. 1995. Molecular characterization and spatial distribution of SAP 97, a novel presynaptic protein homologous to SAP 90 and the *Drosophila* discs large tumor suppressor protein. J. Neurosci. 15: 2354-2356.
7. Matsumine, A., et al. 1996. Binding of APC to the human homolog of the *Drosophila* discs large tumor suppressor protein. Science 272: 1020-1023.

CHROMOSOMAL LOCATION

Genetic locus: DLG4 (human) mapping to 17p13.1; Dlg4 (mouse) mapping to 11 B3.

SOURCE

PSD-95 (4E181) is a mouse monoclonal antibody raised against purified recombinant PSD-95 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

PSD-95 (4E181) is recommended for detection of PSD-95 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PSD-95 siRNA (h): sc-42010, PSD-95 siRNA (m): sc-42012, PSD-95 siRNA (r): sc-270159, PSD-95 shRNA Plasmid (h): sc-42010-SH, PSD-95 shRNA Plasmid (m): sc-42012-SH, PSD-95 shRNA Plasmid (r): sc-270159-SH, PSD-95 shRNA (h) Lentiviral Particles: sc-42010-V, PSD-95 shRNA (m) Lentiviral Particles: sc-42012-V and PSD-95 shRNA (r) Lentiviral Particles: sc-270159-V.

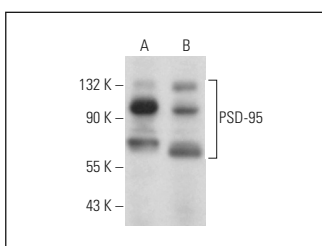
Molecular Weight of PSD-95: 95 kDa.

Positive Controls: mouse cerebellum extract: sc-2403, rat cerebellum extract: sc-2398 or mouse brain extract: sc-2253.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PSD-95 (4E181): sc-71937. Western blot analysis of PSD-95 expression in mouse cerebellum (A) and rat cerebellum (B) tissue extracts.

STORAGE

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



See **PSD-95 (7E3): sc-32290** for PSD-95 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.