SANTA CRUZ BIOTECHNOLOGY, INC.

PSD-93 siRNA (h): sc-36321

BACKGROUND

The postsynaptic density protein (PSD)-93 and related membrane associated guanylate kinase (MAGUK) proteins assemble signal transduction complexes at sites of cell-cell contact including synapses. PSD-93 (also designated channel associated protein of synapse-110 or chapsyn-110) occurs only at postsynaptic sites in hippocampal neurons. PSD-95 and PSD-93 mediate ion channel clustering in heterologous cells and are believed to cluster and anchor NMDA receptors at the synapse. The glutamate receptor subunit, δ2, binds specifically to PSD-93, which is enriched in Purkinje neuron cell bodies and dendrites. In addition, PSD-93 clusters δ2 when they are coexpressed and they are co-localized at parallel fiber synapses.

REFERENCES

1. Brenman, J.E., Christopherson, K.S., Craven, S.E., McGee, A.W. and Bredt, D.S. 1996. Cloning and characterization of postsynaptic density 93, a nitric oxide synthase interacting protein. J. Neurosci. 16: 7407-7415.
2. Fukaya, M., Ueda, H., Yamauchi, K., Inoue, Y. and Watanabe, M. 1999. Distinct spatiotemporal expression of mRNAs for the PSD-95/SAP90 protein family in the mouse brain. Neurosci. Res. 33: 111-118.
3. Roche, K.W., Ly, C.D., Petralia, R.S., Wang, Y.X., McGee, A.W., Bredt, D.S. and Wenthold, R.J. 1999. Postsynaptic density-93 interacts with the δ2 glutamate receptor subunit at parallel fiber synapses. J. Neurosci. 19: 3926-3934.
4. El-Husseini, A.E., Topinka, J.R., Lehrer-Graiwer, J.E., Firestein, B.L., Craven, S.E., Aoki, C. and Bredt, D.S. 2000. Ion channel clustering by membrane associated guanylate kinases: differential regulation by N-terminal lipid and metal binding motifs. J. Biol. Chem. 275: 23904-23910.
5. Sans, N., Petralia, R.S., Wang, Y.X., Blahos, J., 2nd., Hell, J.W. and Wenthold, R.J. 2000. A developmental change in NMDA receptor-associated proteins at hippocampalsynapses. J. Neurosci. 20: 1260-1271.

CHROMOSOMAL LOCATION

Genetic locus: DLG2 (human) mapping to 11q14.1.

PRODUCT

PSD-93 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PSD-93 shRNA Plasmid (h): sc-36321-SH and PSD-93 shRNA (h) Lentiviral Particles: sc-36321-V as alternate gene silencing products.

For independent verification of PSD-93 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36321A, sc-36321B and sc-36321C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PSD-93 siRNA (h) is recommended for the inhibition of PSD-93 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

PSD-93 (A-6): sc-515252 is recommended as a control antibody for monitoring of PSD-93 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PSD-93 gene expression knockdown using RT-PCR Primer: PSD-93 (h)-PR: sc-36321-PR (20 µl, 410 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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