

PICK1 siRNA (h): sc-36221

BACKGROUND

Protein interacting with C kinase 1 (PICK1) is a PDZ-domain containing protein that is located in the perinuclear region and is phosphorylated in response to PKC α activation. PKC α , which is essential for the regulation of proliferation and differentiation in numerous cell types, contains within its catalytic region a PDZ-binding domain that is absent from other PKC isoforms. Mutation of the PICK1 PDZ domain inhibits the binding of PICK1 to PKC α . PICK1 also interacts with the carboxy-terminus of α -amino-3-hydroxy-5-methyl-isoxazole-4-propionic acid (AMPA) receptor, a neurotransmitter receptor located at excitatory synapses, suggesting that PICK1 plays a role in the modulation of synaptic transmission by targeting and anchoring AMPA to specific synapses.

REFERENCES

1. Staudinger, J., et al. 1995. PICK1: a perinuclear binding protein and substrate for protein kinase C isolated by the yeast two-hybrid system. *J. Cell Biol.* 128: 263-271.
2. Staudinger, J., et al. 1997. Specific interaction of the PDZ domain protein PICK1 with the COOH terminus of protein kinase C α . *J. Biol. Chem.* 272: 32019-32024.
3. Xia, J., et al. 1999. Clustering of AMPA receptors by the synaptic PDZ domain-containing protein PICK1. *Neuron* 22: 179-187.
4. Wyszynski, M., et al. 1999. Association of AMPA receptors with a subset of glutamate receptor-interacting protein *in vivo*. *J. Neurosci.* 19: 6528-6537.
5. Dev, K.K., et al. 1999. The protein kinase C α binding protein PICK1 interacts with short but not long form alternative splice variants of AMPA receptor subunits. *Neuropharmacology* 38: 635-644.
6. Matsuzawa, D., et al. 2007. Identification of functional polymorphisms in the promoter region of the human PICK1 gene and their association with methamphetamine psychosis. *Am. J. Psychiatry* 164: 1105-1114.
7. Pan, L., et al. 2007. Clustering and synaptic targeting of PICK1 requires direct interaction between the PDZ domain and lipid membranes. *EMBO J.* 26: 4576-4587.

CHROMOSOMAL LOCATION

Genetic locus: PICK1 (human) mapping to 22q13.1.

PRODUCT

PICK1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PICK1 shRNA Plasmid (h): sc-36221-SH and PICK1 shRNA (h) Lentiviral Particles: sc-36221-V as alternate gene silencing products.

For independent verification of PICK1 (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-36221A, sc-36221B and sc-36221C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PICK1 siRNA (h) is recommended for the inhibition of PICK1 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 μ M in 66 μ l. 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

PICK1 (D-10): sc-390479 is recommended as a control antibody for monitoring of PICK1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (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 PICK1 gene expression knockdown using RT-PCR Primer: PICK1 (h)-PR: sc-36221-PR (20 μ l, 452 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hikida, T, et al. 2008. Modulation of D-serine levels in brains of mice lacking PICK1. *Biol. Psychiatry* 63: 997-1000.

RESEARCH USE

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