

SAPAP2 siRNA (h): sc-77555

BACKGROUND

A guanylate kinase is a phosphotransferase that produces ADP and GDP from the substrates ATP and GMP. SAPAP2, also known as DAP-2 (Disks large-associated protein 2) and PSD-95/SAP90-binding protein 2, is a 1,054 amino acid protein that localizes to the postsynaptic membrane of neuronal cells of the brain and kidney. SAPAP2 likely acts as a signaling molecule which interacts with the human genes DLG1 and DLG4/PSD-95. The gene encoding SAPAP2, DLGAP2, maps to human chromosome 8. Consisting of nearly 146 million base pairs, chromosome 8 encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that maps to chromosome 8.

REFERENCES

1. Satoh, K., Yanai, H., Senda, T., Kohu, K., Nakamura, T., Okumura, N., Matsumine, A., Kobayashi, S., Toyoshima, K. and Akiyama, T. 1997. DAP-1, a novel protein that interacts with the guanylate kinase-like domains of hDLG and PSD-95. *Genes Cells* 2: 415-424.
2. Takeuchi, M., Hata, Y., Hirao, K., Toyoda, A., Irie, M. and Takai, Y. 1997. SAPAPs. A family of PSD-95/SAP90-associated proteins localized at postsynaptic density. *J. Biol. Chem.* 272: 11943-11951.
3. Naisbitt, S., Kim, E., Weinberg, R.J., Rao, A., Yang, F.C., Craig, A.M. and Sheng, M. 1997. Characterization of guanylate kinase-associated protein, a postsynaptic density protein at excitatory synapses that interacts directly with postsynaptic density-95/synapse-associated protein 90. *J. Neurosci.* 17: 5687-5696.
4. Wildenauer, D.B. and Schwab, S.G. 1999. Chromosomes 8 and 10 workshop. *Am. J. Med. Genet.* 88: 239-243.
5. Ranta, S., Zhang, Y., Ross, B., Takkunen, E., Hirvasniemi, A., de la Chapelle, A., Gilliam, T.C. and Lehesjoki, A.E. 2000. Positional cloning and characterisation of the human DLGAP2 gene and its exclusion in progressive epilepsy with mental retardation. *Eur. J. Hum. Genet.* 8: 381-384.
6. Hirao, K., Hata, Y., Deguchi, M., Yao, I., Ogura, M., Rokukawa, C., Kawabe, H., Mizoguchi, A. and Takai, Y. 2000. Association of synapse-associated protein 90/postsynaptic density-95-associated protein (SAPAP) with neurofilaments. *Genes Cells* 5: 203-210.
7. Ohtakara, K., Nishizawa, M., Izawa, I., Hata, Y., Matsushima, S., Taki, W., Inada, H., Takai, Y. and Inagaki, M. 2002. Densin-180, a synaptic protein, links to PSD-95 through its direct interaction with MAGUIN-1. *Genes Cells* 7: 1149-1160.

CHROMOSOMAL LOCATION

Genetic locus: DLGAP2 (human) mapping to 8p23.3.

PROTOCOLS

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

PRODUCT

SAPAP2 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 SAPAP2 shRNA Plasmid (h): sc-77555-SH and SAPAP2 shRNA (h) Lentiviral Particles: sc-77555-V as alternate gene silencing products.

For independent verification of SAPAP2 (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-77555A, sc-77555B and sc-77555C.

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

SAPAP2 siRNA (h) is recommended for the inhibition of SAPAP2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SAPAP2 gene expression knockdown using RT-PCR Primer: SAPAP2 (h)-PR: sc-77555-PR (20 μ l). 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.