SANTA CRUZ BIOTECHNOLOGY, INC.

DOC2A siRNA (h): sc-93040

BACKGROUND

Members of the DOC2 (double C2-like domain) protein family are thought to function as vesicular adapter proteins and are characterized by their double C2 domains. DOC2A (double C2-like domain-containing protein alpha), also known as DOC2, is a 400 amino acid protein that shares 70% amino acid sequence homology with human DOC2B. DOC2A interacts with Munc13-1 to modify calcium dependent neurotransmitter release and likely participates in dynein-dependent intracellular vesicle transport. A peripheral membrane protein, DOC2A is known to localize to lysosome and synaptosome, as well as cytoplasmic and secretory vesicles. Expressed at highest levels in brain, DOC2A is also found in testis and contains two C2 domains, the first of which is used to bind calcium and phospholipids. The gene encoding DOC2A maps to human chromosome 16p11.2 and murine chromosome 7 F3.

REFERENCES

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2. Sakaguchi, G., et al. 1995. Molecular cloning of an isoform of DOC2 having two C2-like domains. Biochem. Biophys. Res. Commun. 217: 1053-1061.
3. Orita, S., et al. 1997. Physical and functional interactions of DOC2 and Munc13 in Ca^{2+}-dependent exocytotic machinery. J. Biol. Chem. 272: 16081-16084.
4. Verhage, M., et al. 1997. DOC2 proteins in rat brain: complementary distribution and proposed function as vesicular adapter proteins in early stages of secretion. Neuron 18: 453-461.
5. Nagano, F., et al. 1998. Interaction of DOC2 with Tctex1, a light chain of cytoplasmic dynein. Implication in dynein-dependent vesicle transport. J. Biol. Chem. 273: 30065-30068.
6. Mochida, S., et al. 1998. Role of the DOC2 α-Munc13-1 interaction in the neurotransmitter release process. Proc. Natl. Acad. Sci. USA 95: 11418-11422.

CHROMOSOMAL LOCATION

Genetic locus: DOC2A (human) mapping to 16p11.2.

PRODUCT

DOC2A 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 DOC2A shRNA Plasmid (h): sc-93040-SH and DOC2A shRNA (h) Lentiviral Particles: sc-93040-V as alternate gene silencing products.

For independent verification of DOC2A (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-93040A, sc-93040B and sc-93040C.

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

DOC2A siRNA (h) is recommended for the inhibition of DOC2A 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DOC2A gene expression knockdown using RT-PCR Primer: DOC2A (h)-PR: sc-93040-PR (20 µl). 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.