

Dok-7 siRNA (m): sc-61853

BACKGROUND

The downstream of kinase family (Dok1-7) are members of a class of "docking" proteins that include the tyrosine kinase substrates IRS-1 and Cas, which contain multiple tyrosine residues and putative SH2 binding sites. Based on their similarities, the Dok family of proteins can be divided into three subgroups: Dok-1/2/3, Dok-4/5/6 and Dok-7. Through its interaction with muscle-specific receptor kinase (MuSK), Dok-7 is crucial for neuromuscular synaptogenesis and for MuSK activation. Mice lacking Dok-7 do not form neuromuscular synapses nor acetylcholine receptor clusters. Mutations in the Dok-7 gene can cause congenital myasthenic syndromes (CMA)—recessively inherited disorders characterized by muscle weakness.

REFERENCES

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3. Okada, K., Inoue, A., Okada, M., Murata, Y., Kakuta, S., Jigami, T., Kubo, S., Shiraishi, H., Eguchi, K., Motomura, M., Akiyama, T., Iwakura, Y., Higuchi, O. and Yamanashi, Y. 2006. The muscle protein Dok-7 is essential for neuromuscular synaptogenesis. *Science* 312: 1802-1805.
4. Beeson, D., Higuchi, O., Palace, J., Cossins, J., Spearman, H., Maxwell, S., Newsom-Davis, J., Burke, G., Fawcett, P., Motomura, M., Muller, J.S., Lochmuller, H., Slater, C., Vincent, A. and Yamanashi, Y. 2006. Dok-7 mutations underlie a neuromuscular junction synaptopathy. *Science* 313: 1975-1978.

CHROMOSOMAL LOCATION

Genetic locus: Dok7 (mouse) mapping to 5 B2.

PRODUCT

Dok-7 siRNA (m) 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 Dok-7 shRNA Plasmid (m): sc-61853-SH and Dok-7 shRNA (m) Lentiviral Particles: sc-61853-V as alternate gene silencing products.

For independent verification of Dok-7 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61853A, sc-61853B and sc-61853C.

RESEARCH USE

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

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 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

Dok-7 siRNA (m) is recommended for the inhibition of Dok-7 expression in mouse 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

Dok-7 (A-7): sc-390856 is recommended as a control antibody for monitoring of Dok-7 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 Dok-7 gene expression knockdown using RT-PCR Primer: Dok-7 (m)-PR: sc-61853-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.