

DOCK 8 siRNA (h): sc-92764

BACKGROUND

DOCK 8 (dedicator of cytokinesis 8) is a 2,099 amino acid protein that contains one DHR-2 (CZH-2) domain and one DHR-1 (CZH-1) domain. One of several members of the DOCK family of cytokinesis-regulating proteins, DOCK 8 functions as a potential guanine nucleotide exchange factor (GEF) that may play a role in protein activation and is thought to influence Actin organization. Defects in the gene encoding DOCK 8 may be associated with the pathogenesis of autosomal dominant mental retardation, possibly due to errors in Actin-based cytoskeletal structure. Multiple isoforms of DOCK 8 exist due to alternative splicing events. The gene encoding DOCK 8 maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome.

REFERENCES

1. Ruusala, A. and Aspenström, P. 2004. Isolation and characterisation of DOCK8, a member of the DOCK180-related regulators of cell morphology. *FEBS Lett.* 572: 159-166.
2. Griggs, B.L. et al., 2008. Dedicator of cytokinesis 8 is disrupted in two patients with mental retardation and developmental disabilities. *Genomics* 91: 195-202.
3. Zhang, Q., et al. 2009. Combined immunodeficiency associated with DOCK8 mutations. *N. Engl. J. Med.* 361: 2046-2055.
4. Jabara, H.H., et al. 2012. DOCK8 functions as an adaptor that links TLR-MyD88 signaling to B cell activation. *Nat. Immunol.* 13: 612-620.
5. Alsum, Z., et al. 2013. Clinical, immunological and molecular characterization of DOCK8 and DOCK8-like deficient patients: single center experience of twenty-five patients. *J. Clin. Immunol.* 33: 55-67.
6. Mizesko, M.C., et al. 2013. Defective actin accumulation impairs human natural killer cell function in patients with dedicator of cytokinesis 8 deficiency. *J. Allergy Clin. Immunol.* 131: 840-848.
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CHROMOSOMAL LOCATION

Genetic locus: DOCK8 (human) mapping to 9p24.3.

PRODUCT

DOCK 8 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 DOCK 8 shRNA Plasmid (h): sc-92764-SH and DOCK 8 shRNA (h) Lentiviral Particles: sc-92764-V as alternate gene silencing products.

For independent verification of DOCK 8 (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-92764A, sc-92764B and sc-92764C.

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

DOCK 8 siRNA (h) is recommended for the inhibition of DOCK 8 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

DOCK 8 (G-2): sc-376911 is recommended as a control antibody for monitoring of DOCK 8 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 DOCK 8 gene expression knockdown using RT-PCR Primer: DOCK 8 (h)-PR: sc-92764-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.

PROTOCOLS

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