

# DOCK 7 siRNA (h): sc-88434

## BACKGROUND

DOCK 7 (dedicator of cytokinesis 7), also known as ZIR2, is a 2,140 amino acid protein that localizes to developing axons and contains one DHR-1 domain and one DHR-2 domain. Expressed in a variety of tissues, DOCK 7 functions as a guanine nucleotide exchange factor (GEF) that specifically activates Rac 1 and Rac 3 by catalyzing the exchange of bound GDP for free GTP. Multiple isoforms of DOCK 7 exist due to alternative splicing events. The gene encoding DOCK 7 maps to human chromosome 1p31.3, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

## REFERENCES

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3. Pinheiro, E.M. and Gertler, F.B. 2006. Nervous Rac: DOCK 7 regulation of axon formation. *Neuron* 51: 674-676.
4. Watabe-Uchida, M., et al. 2006. The Rac activator DOCK 7 regulates neuronal polarity through local phosphorylation of stathmin/Op18. *Neuron* 51: 727-739.
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## CHROMOSOMAL LOCATION

Genetic locus: DOCK7 (human) mapping to 1p31.3.

## PRODUCT

DOCK 7 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DOCK 7 shRNA Plasmid (h): sc-88434-SH and DOCK 7 shRNA (h) Lentiviral Particles: sc-88434-V as alternate gene silencing products.

For independent verification of DOCK 7 (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-88434A, sc-88434B and sc-88434C.

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

## APPLICATIONS

DOCK 7 siRNA (h) is recommended for the inhibition of DOCK 7 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  $\mu$ M in 66  $\mu$ 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 7 (C-7): sc-398888 is recommended as a control antibody for monitoring of DOCK 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 7 gene expression knockdown using RT-PCR Primer: DOCK 7 (h)-PR: sc-88434-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.