SANTA CRUZ BIOTECHNOLOGY, INC.

DOCK 2 siRNA (m): sc-60546

BACKGROUND

The DOCK2 gene encodes dedicator of cytokinesis 2 (DOCK 2), a hematopoietic cell-specific CDM family protein that is indispensable for lymphocyte chemotaxis. DOCK 2 participates in the cytoskeletal rearrangements that are required for lymphocyte migration in response of chemokines. This peripheral membrane protein activates Rac 1 and Rac 2 small GTPases, while presumably acting as a guanine nucleotide exchange factor (GEF), which exchanges bound GDP for free GTP. DOCK 2 may also participate in IL-2 transcriptional activation through the activation of Rac 2. DOCK 2 contains one DHR-1 (CZH-1) domain, one DHR-2 (CZH-2) domain and one SH3 domain. The DHR-2 domain is a putative GEF activity mediator. The DOCK 2 protein also co-localizes with F-Actin, and demonstrates expression in several human tissues, with the highest levels observed in peripheral blood leukocytes, thymus, spleen and liver.

REFERENCES

1. Nagase, T., et al. 1997. Prediction of the coding sequences of unidentified human genes. VI. The coding sequences of 80 new genes (KIAA0201-KIAA0280) deduced by analysis of cDNA clones from cell line KG-1 and brain. DNA Res. 3: 321-329, 341-354.
2. Fukui, Y., et al. 2001. Haematopoietic cell-specific CDM family protein DOCK 2 is essential for lymphocyte migration. Nature 412: 826-831.
3. Sanui, T., et al. 2003. DOCK 2 is essential for antigen-induced translocation of TCR and lipid rafts, but not PKC θ and LFA-1, in T cells. Immunity 19: 119-129.
4. Nombela-Arrieta, C., et al. 2004. Differential requirements for DOCK 2 and phosphoinositide-3-kinase γ during T and B lymphocyte homing. Immunity 21: 429-441.
5. Jiang, H., et al. 2005. Deletion of DOCK 2, a regulator of the Actin cytoskeleton in lymphocytes, suppresses cardiac allograft rejection. J. Exp. Med. 202: 1121-1130.
6. Kunisaki, Y., et al. 2006. DOCK 2 is required in T cell precursors for development of Vα14 NK T cells. J. Immunol. 176: 4640-4645.
7. Shulman, Z., et al. 2006. DOCK 2 regulates chemokine-triggered lateral lymphocyte motility but not transendothelial migration. Blood 108: 2150-2158.

CHROMOSOMAL LOCATION

Genetic locus: Dock2 (mouse) mapping to 11 A4.

PRODUCT

DOCK 2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DOCK 2 shRNA Plasmid (m): sc-60546-SH and DOCK 2 shRNA (m) Lentiviral Particles: sc-60546-V as alternate gene silencing products.

For independent verification of DOCK 2 (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-60546A, sc-60546B and sc-60546C.

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

DOCK 2 siRNA (m) is recommended for the inhibition of DOCK 2 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 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.

GENE EXPRESSION MONITORING

DOCK 2 (E-7): sc-365242 is recommended as a control antibody for monitoring of DOCK 2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 2 gene expression knockdown using RT-PCR Primer: DOCK 2 (m)-PR: sc-60546-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.

PROTOCOLS

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