SANTA CRUZ BIOTECHNOLOGY, INC.

DOCK 5 siRNA (h): sc-77473

BACKGROUND

DOCK 5 (dedicator of cytokinesis protein 5) is a 1,870 amino acid protein belonging to the DOCK family of cytokinesis-regulating proteins. This cytoplasmic 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 5 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. In mice, spontaneous mutation of the gene encoding DOCK 5 leads to deletion of the DHR-1 domain, which functions to bind phospholipids and assists in protein-protein interactions, resulting in rupture of lens cataract (RLC). Due to siRNA knockdown studies, it is suspected that DOCK 5 may also be an important mediator of CrkII/CrkL regulation of Caco-2 migration and spreading on COL4. There are two isoforms of DOCK 5 that exist as a result of alternative splicing events.

REFERENCES

1. Côte, J.F., et al. 2002. Identification of an evolutionarily conserved superfamily of DOCK180-related proteins with guanine nucleotide exchange activity. J. Cell. Sci. 115: 4901-4913.
2. Sanders, M.A., et al. 2004. Collagen IV regulates Caco-2 migration and ERK activation via $\alpha 1\beta 1$- and $\alpha 2\beta 1$-integrin-dependent Src kinase activation. Am. J. Physiol. Gastrointest. Liver Physiol. 286: G547-G557.
3. Côte, J.F., et al. 2005. A novel and evolutionarily conserved PtdIns(3,4,5)P3-binding domain is necessary for DOCK180 signalling. Nat. Cell Biol. 7: 797-807.
4. Takahashi, K., et al. 2006. Homozygous deletion and reduced expression of the DOCK8 gene in human lung cancer. Int. J. Oncol. 28: 321-328.
5. Omi, N., et al. 2008. Mutation of Dock5, a member of the guanine exchange factor Dock180 superfamily, in the rupture of lens cataract mouse. Exp. Eye Res. 86: 828-834.

CHROMOSOMAL LOCATION

Genetic locus: DOCK5 (human) mapping to 8p21.2.

PRODUCT

DOCK 5 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 DOCK 5 shRNA Plasmid (h): sc-77473-SH and DOCK 5 shRNA (h) Lentiviral Particles: sc-77473-V as alternate gene silencing products.

For independent verification of DOCK 5 (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-77473A, sc-77473B and sc-77473C.

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

DOCK 5 siRNA (h) is recommended for the inhibition of DOCK 5 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 DOCK 5 gene expression knockdown using RT-PCR Primer: DOCK 5 (h)-PR: sc-77473-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.