SANTA CRUZ BIOTECHNOLOGY, INC.

DOCK 11 siRNA (h): sc-77168

BACKGROUND

Small GTPases of the Rho family, Rho, Rac and Cdc42, are critical regulatorsof the Actin cytoskeleton and many other cellular processes. Rho GTPases are activated by Dbl-homology (DH)-domain-containing guanine nucleotide exchange factors (GEFs). DOCK 11 (dedicator of cytokinesis 11), also known as ACG or ZIZ2 (Zizimin-2), is a 2,073 amino acid protein belonging to the DOCK family of cytokinesis-regulating proteins that is mainly expressed in peripheral blood leukocytes. DOCK 11 functions as a GEF that binds and activates Cdc42 by exchanging bound GDP for free GTP. Cdc42 mediates cell polarity, gene expression, cell cycle progression and cell-cell contacts. Similar to other DOCK family members, DOCK 11 contains a PH domain and two internal DOCK homology regions designated DHR1 and DHR2.

REFERENCES

1. Meller, N., et al. 2002. Zizimin-1, a novel Cdc42 activator, reveals a new GEF domain for Rho proteins. Nat. Cell Biol. 4: 639-647.
2. Meller, N., et al. 2004. The novel Cdc42 guanine nucleotide exchange factor, Zizimin-1, dimerizes via the Cdc42-binding CZH2 domain. J. Biol. Chem. 279: 37470-37476.
3. Nishikimi, A., et al. 2005. Zizimin-2: a novel, DOCK 180-related Cdc42 guanine nucleotide exchange factor expressed predominantly in lymphocytes. FEBS Lett. 579: 1039-1046.
4. Lin, Q., et al. 2006. Identification of a DOCK 180-related guanine nucleotide exchange factor that is capable of mediating a positive feedback activation of Cdc42. J. Biol. Chem. 281: 35253-35262.
5. Chien, W.M., et al. 2007. Differential gene expression of $p27^{Kip1}$ and Rb knockout pituitary tumors associated with altered growth and angiogenesis. Cell Cycle 6: 750-757.
6. Miyamoto, Y., et al. 2007. DOCK 6, a DOCK-C subfamily guanine nucleotide exchanger, has the dual specificity for Rac 1 and Cdc42 and regulates neurite outgrowth. Exp. Cell Res. 313: 791-804.

CHROMOSOMAL LOCATION

Genetic locus: DOCK11 (human) mapping to Xq24.

PRODUCT

DOCK 11 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 11 shRNA Plasmid (h): sc-77168-SH and DOCK 11 shRNA (h) Lentiviral Particles: sc-77168-V as alternate gene silencing products.

For independent verification of DOCK 11 (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-77168A, sc-77168B and sc-77168C.

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 11 siRNA (h) is recommended for the inhibition of DOCK 11 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 11 gene expression knockdown using RT-PCR Primer: DOCK 11 (h)-PR: sc-77168-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.