SANTA CRUZ BIOTECHNOLOGY, INC.

Dok-4 siRNA (h): sc-105313

BACKGROUND

The downstream of kinase family (Dok-1-7) are members of a class of docking proteins that interact with receptor tyrosine kinases and, via this interaction, mediate biological responses within the body. Dok-4 (downstream of kinase-4) is a 326 amino acid protein that contains one PH domain and one IRS-type PTB domain and belongs to the Dok family of interacting proteins. Expressed in a variety of tissues with highest expression in liver, heart, kidney and skeletal muscle, Dok-4 plays an important role in Ret-mediated neurite outgrowth and may link Ret with downstream effectors during neuronal differentiation. Additionally, Dok-4 is thought to play a positive role in the activation of MAPK pathways and may participate in T-cell induced immune system regulation. Overexpression of Dok-4 is associated with clear cell renal cell carcinoma, suggesting a role for Dok-4 in tumorigenesis.

REFERENCES

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3. Favre, C., et al. 2003. Dok-4 and Dok-5: new Dok-related genes expressed in human T cells. Genes Immun. 4: 40-45.
4. Cai, D., et al. 2003. Two new substrates in Insulin signaling, IRS5/Dok-4 and IRS6/Dok-5. J. Biol. Chem. 278: 25323-25330.
5. Bedirian, A., et al. 2004. Pleckstrin homology and phosphotyrosine-binding domain-dependent membrane association and tyrosine phosphorylation of Dok-4, an inhibitory adapter molecule expressed in epithelial cells. J. Biol. Chem. 279: 19335-19349.
6. Uchida, M., et al. 2006. Dok-4 regulates GDNF-dependent neurite outgrowth through downstream activation of Rap1 and mitogen-activated protein kinase. J. Cell Sci. 119: 3067-3077.
7. Bourane, S., et al. 2007. A SAGE-based screen for genes expressed in sub-populations of neurons in the mouse dorsal root ganglion. BMC Neurosci. 8: 97.

CHROMOSOMAL LOCATION

Genetic locus: DOK4 (human) mapping to 16q21.

PRODUCT

Dok-4 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 Dok-4 shRNA Plasmid (h): sc-105313-SH and Dok-4 shRNA (h) Lentiviral Particles: sc-105313-V as alternate gene silencing products.

For independent verification of Dok-4 (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-105313A, sc-105313B and sc-105313C.

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

Dok-4 siRNA (h) is recommended for the inhibition of Dok-4 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 Dok-4 gene expression knockdown using RT-PCR Primer: Dok-4 (h)-PR: sc-105313-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.