SANTA CRUZ BIOTECHNOLOGY, INC.

DIXDC1 siRNA (m): sc-143051

BACKGROUND

DIXDC1 (DIX domain containing 1), also known as CCD1 or Dixin, is a 683 amino acid protein protein that localizes to the cell junction and to the cytoplasm in an isoform-dependent manner and contains one DIX domain and one CH (calponin-homology) domain. Expressed ubiquitously with highest expression in skeletal and cardiac muscle, DIXDC1 interacts with F-Actin and functions as a positive regulator of the Wnt signaling pathway, effectively targeting the β-catenin-TCF complex for gene expression and mediating Actin dynamics within the cytoskeleton. The gene encoding DIXDC1 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Katoh, M., et al. 2003. KIAA1735 gene on human chromosome 11q23.1 encodes a novel protein with myosine-tail homologous domain and C-terminal DIX domain. Int. J. Oncol. 23: 145-150.
2. Wong, C.K., et al. 2004. The DIX domain protein coiled-coil-DIX1 inhibits c-Jun N-terminal kinase activation by Axin and dishevelled through distinct mechanisms. J. Biol. Chem. 279: 39366-39373.
3. Luo, W., et al. 2005. Axin contains three separable domains that confer intramolecular, homo-dimeric, and heterodimeric interactions involved in distinct functions. J. Biol. Chem. 280: 5054-5060.
4. Wang, X., et al. 2006. DIXDC1 isoform, l-DIXDC1, is a novel filamentous Actin-binding protein. Biochem. Biophys. Res. Commun. 347: 22-30.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610493. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Shibata, N., et al. 2007. Crystallization and preliminary X-ray crystallographic studies of the axin DIX domain. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 63: 529-531.
7. Jing, X.T., et al. 2009. DIXDC1 promotes retinoic acid-induced neuronal differentiation and inhibits gliogenesis in P19 cells. Cell. Mol. Neurobiol. 29: 55-67.

CHROMOSOMAL LOCATION

Genetic locus: Dixdc1 (mouse) mapping to 9 A5.3.

PRODUCT

DIXDC1 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 DIXDC1 shRNA Plasmid (m): sc-143051-SH and DIXDC1 shRNA (m) Lentiviral Particles: sc-143051-V as alternate gene silencing products.

For independent verification of DIXDC1 (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-143051A, sc-143051B and sc-143051C.

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

DIXDC1 siRNA (m) is recommended for the inhibition of DIXDC1 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

DIXDC1 (A-6): sc-377160 is recommended as a control antibody for monitoring of DIXDC1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DIXDC1 gene expression knockdown using RT-PCR Primer: DIXDC1 (m)-PR: sc-143051-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, T., et al. 2018. DIXDC1 prevents oxygen-glucose deprivation/reoxygenation-induced injury in hippocampal neurons *in vitro* by promoting Wnt/β-catenin signaling. Eur. Rev. Med. Pharmacol. Sci. 22: 5678-5687.

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.