SANTA CRUZ BIOTECHNOLOGY, INC.

CHD2 siRNA (m): sc-72882

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The Power to Question

BACKGROUND

The CHD family of proteins is characterized by the presence of chromo (chromatin organization modifier) domains and SNF2-related helicase/ATPase domains. CHD proteins alter gene expression by modifying chromatin structure, thereby altering access of the transcriptional machinery to its chromosomal DNA template. Chromodomain helicase DNA binding protein 2, also known as CHD2, is a member of the SNF2/RAD54 helicase family of chromatin remodeling and DNA-binding proteins (CDH proteins). Consisting of 1,828 amino acids, CHD2 is expressed in the nucleus and contains 2 chromo domains, a helicase ATP-binding domain and a helicase C-terminal domain. CHD2 is suggested to play a critical role in development, hematopoiesis and tumor suppression. Mutations in the gene encoding CHD2 may be the cause of glomerulopathy, proteinuria and significantly impaired kidney function. CHD2 exists as two alternatively spliced isoforms.

REFERENCES

1. Woodage, T., et al. 1997. Characterization of the CHD family of proteins. Proc. Natl. Acad. Sci. USA 94: 11472-11477.
2. Marfella, C.G., et al. 2006. Mutation of the SNF2 family member CHD2 affects mouse development and survival. J. Cell. Physiol. 209: 162-171.
3. Flanagan, J.F., et al. 2007. Molecular implications of evolutionary differences in CHD double chromodomains. J. Mol. Biol. 369: 334-342.
4. Marfella, C.G. and Imbalzano, A.N. 2007. The CHD family of chromatin remodelers. Mutat. Res. 618: 30-40.
5. Kulkarni, S., et al. 2008. Disruption of chromodomain helicase DNA binding protein 2 (CHD2) causes scoliosis. Am. J. Med. Genet. A. 146A: 1117-1127.
6. Marfella, C.G., et al. 2008. A mutation in the mouse CHD2 chromatin remodeling enzyme results in a complex renal phenotype. Kidney Blood Press. Res. 31: 421-432.
7. Nagarajan, P., et al. 2009. Role of chromodomain helicase DNA-binding protein 2 in DNA damage response signaling and tumorigenesis. Oncogene 28: 1053-1062.

CHROMOSOMAL LOCATION

Genetic locus: Chd2 (mouse) mapping to 7 D1.

PRODUCT

CHD2 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 CHD2 shRNA Plasmid (m): sc-72882-SH and CHD2 shRNA (m) Lentiviral Particles: sc-72882-V as alternate gene silencing products.

For independent verification of CHD2 (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-72882A, sc-72882B and sc-72882C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

CHD2 siRNA (m) is recommended for the inhibition of CHD2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CHD2 gene expression knockdown using RT-PCR Primer: CHD2 (m)-PR: sc-72882-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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