SANTA CRUZ BIOTECHNOLOGY, INC.

CHD7 siRNA (h): sc-72884

BACKGROUND

Chromodomain-helicase-DNA-binding protein 7 (CHD7) is a 2,997 amino acid member of the SNF2/RAD54 helicase family of proteins and contains two chromo domains, one helicase ATP-binding domain and one helicase C-terminal domain. Highly expressed in both fetal and adult brain, CHD7 is thought to be a potential transcription regulator. Mutations in the gene encoding CHD7 have been shown to cause CHARGE syndrome, a common cause of congenital anomalies, including choanal atresia and malformations of the heart, inner ear and retina. Defects in the CHD7 gene has also been linked to increased susceptibility to idiopathic scoliosis, the most common spinal deformity in children. Two isoforms of CHD7 exist as a result of alternative splicing events.

REFERENCES

1. Ogata, T., et al. 2006. Kallmann syndrome phenotype in a female patient with CHARGE syndrome and CHD7 mutation. Endocr. J. 53: 741-743.
2. Gao, X., et al. 2007. CHD7 gene polymorphisms are associated with susceptibility to idiopathic scoliosis. Am. J. Hum. Genet. 80: 957-965.
3. Udaka, T., et al. 2007. An Alu retrotransposition-mediated deletion of CHD7 in a patient with CHARGE syndrome. Am. J. Med. Genet. A 143A: 721-726.
4. Hurd, E.A., et al. 2007. Loss of CHD7 function in gene-trapped reporter mice is embryonic lethal and associated with severe defects in multiple developing tissues. Mamm. Genome 18: 94-104.
5. Kim, H.G., et al. 2008. Mutations in CHD7, encoding a chromatin-remodeling protein, cause idiopathic hypo-gonadotropic hypogonadism and Kallmann syndrome. Am. J. Hum. Genet. 83: 511-519.
6. Ellison, J. 2008. Gene symbol: CHD7. Disease: CHARGE syndrome. Hum. Genet. 124: 323.

CHROMOSOMAL LOCATION

Genetic locus: CHD7 (human) mapping to 8q12.1.

PRODUCT

CHD7 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 CHD7 shRNA Plasmid (h): sc-72884-SH and CHD7 shRNA (h) Lentiviral Particles: sc-72884-V as alternate gene silencing products.

For independent verification of CHD7 (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-72884A, sc-72884B and sc-72884C.

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.

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

CHD7 siRNA (h) is recommended for the inhibition of CHD7 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.

GENE EXPRESSION MONITORING

CHD7 (F-11): sc-390742 is recommended as a control antibody for monitoring of CHD7 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CHD7 gene expression knockdown using RT-PCR Primer: CHD7 (h)-PR: sc-72884-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.