SANTA CRUZ BIOTECHNOLOGY, INC.

CHD5 siRNA (m): sc-62103

BACKGROUND

Chromodomain helicase DNA binding protein 5, also known as CHD5, is a member of the SNF2/RAD54 helicase family of chromatin remodeling and DNA-binding proteins (CDH proteins). Heavily expressed in both fetal and adult brain, CHD5 plays a role in nervous system development and acts as a tumor suppressor via the Arf/p53 pathway. CHD5, along with other chromodomain proteins, forms remodeling complexes, such as NuRD, that promote normal neuroblast maturation and are thought to prevent overexpression of neuronal cells. Errors in these chromatin remodeling complexes can leave the cell in a perpetual state of growth, preventing differentiation and leading to tumor formation. Due to the importance of the CHD proteins in proper brain development, deletions in the gene encoding CHD5 are commonly found in neuroblastomas, suggesting that CHD5 deficiency may lead to malignant cell transformation and metastasis.

REFERENCES

1. Schuster, E.F., et al. 2002. CHD5 defines a new subfamily of chromodomain-SWI2/SNF2-like helicases. Mamm. Genome 13: 117-119.
2. Thompson, P.M., et al. 2003. CHD5, a new member of the chromodomain gene family, is preferentially expressed in the nervous system. Oncogene 22: 1002-1011.
3. Ando, A., et al. 2005. Cooperative function of the CHD5-like protein Mdm39p with a P-type ATPase Spf1p in the maintenance of ER homeostasis in *Saccharomyces cerevisiae*. Mol. Genet. Genomics 273: 497-506.
4. Sjöblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. Science 314: 268-274.
5. Bagchi, A., et al. 2007. CHD5 is a tumor suppressor at human 1p36. Cell 128: 459-475.
6. Marfella, C.G., et al. 2007. The Chd family of chromatin remodelers. Mutat. Res. 618: 30-40.

CHROMOSOMAL LOCATION

Genetic locus: Chd5 (mouse) mapping to 4 E2.

PRODUCT

CHD5 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 CHD5 shRNA Plasmid (m): sc-62103-SH and CHD5 shRNA (m) Lentiviral Particles: sc-62103-V as alternate gene silencing products.

For independent verification of CHD5 (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-62103A, sc-62103B and sc-62103C.

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

CHD5 siRNA (m) is recommended for the inhibition of CHD5 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

CHD5 (D-10): sc-271248 is recommended as a control antibody for monitoring of CHD5 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 CHD5 gene expression knockdown using RT-PCR Primer: CHD5 (m)-PR: sc-62103-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.