SANTA CRUZ BIOTECHNOLOGY, INC.

ZNF74 siRNA (h): sc-77004

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. As a member of the Krüppel C_2H_2-type zinc-finger protein family, ZNF74 (zinc finger protein 74) is a 643 amino acid nuclear protein that contains one KRAB domain and 12 C_2H_2-type zinc fingers. These internal features enable ZNF74 to bind tightly to the nuclear matrix and be involved in protein-protein interactions. Mapping to chromosome 22, the gene encoding ZNF74 is found to be consistently deleted in DiGeorge syndrome, a disease characterized by congenital heart defects, recurrent infections, palate abnormalities and learning disabilities. There are four isoforms of ZNF74 that are produced as a result of alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 194548. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Ravassard, P., et al. 1999. ZNF74, a gene deleted in DiGeorge syndrome, is expressed in human neural crest-derived tissues and foregut endoderm epithelia. Genomics 62: 82-85.
3. Côte, F., et al. 2001. Alternative promoter usage and splicing of ZNF74 multifinger gene produce protein isoforms with a different repressor activity and nuclear partitioning. DNA Cell Biol. 20: 159-173.
4. Takase, K., et al. 2001. Association of ZNF74 gene genotypes with age-at-onset of schizophrenia. Schizophr. Res. 52: 161-165.
5. Ladomery, M. and Dellaire, G. 2002. Multifunctional zinc finger proteins in development and disease. Ann. Hum. Genet. 66: 331-342.
6. Williams, N.M., et al. 2002. Mutation screening and LD mapping in the VCFS deleted region of chromosome 22q11 in schizophrenia using a novel DNA pooling approach. Mol. Psychiatry 7: 1092-1100.

CHROMOSOMAL LOCATION

Genetic locus: ZNF74 (human) mapping to 22q11.21.

PRODUCT

ZNF74 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 ZNF74 shRNA Plasmid (h): sc-77004-SH and ZNF74 shRNA (h) Lentiviral Particles: sc-77004-V as alternate gene silencing products.

For independent verification of ZNF74 (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-77004A, sc-77004B and sc-77004C.

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

ZNF74 siRNA (h) is recommended for the inhibition of ZNF74 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

ZNF74 (B-11): sc-390612 is recommended as a control antibody for monitoring of ZNF74 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 ZNF74 gene expression knockdown using RT-PCR Primer: ZNF74 (h)-PR: sc-77004-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.