

# ZNF673 siRNA (h): sc-90921

## 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. ZNF673 (zinc finger protein 630) is a 171 amino acid protein that contains one KRAB domain and may be involved in transcriptional regulation. Localizing to the nucleus, ZNF673 is expressed in brain, ovary, testis, prostate, tonsil, heart, bone marrow, colon, breast and kidney. ZNF673 exists as three alternatively spliced isoforms, and is encoded by a gene that maps a region of human chromosome X that may be involved in nonsyndromic X-linked mental retardation. Chromosome X consists of approximately 153 million base pairs and nearly 1,000 genes. Color blindness, hemophilia and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently, as males carry a single X chromosome.

## REFERENCES

- Thiesen, H.J. 1990. Multiple genes encoding zinc finger domains are expressed in human T cells. *New Biol.* 2: 363-374.
- Rousseau-Merck, M.F., Hillion, J., Jonveaux, P., Couillin, P., Seite, P., Thiesen, H.J. and Berger, R. 1993. Chromosomal localization of 9 KOX zinc finger genes: physical linkages suggest clustering of KOX genes on chromosomes 12, 16, and 19. *Hum. Genet.* 92: 583-587.
- Rosenfeld, R. and Margalit, H. 1993. Zinc fingers: conserved properties that can distinguish between spurious and actual DNA-binding motifs. *J. Biomol. Struct. Dyn.* 11: 557-570.
- Han, Z.G., Zhang, Q.H., Ye, M., Kan, L.X., Gu, B.W., He, K.L., Shi, S.L., Zhou, J., Fu, G., Mao, M., Chen, S.J., Yu, L. and Chen, Z. 1999. Molecular cloning of six novel Krüppel-like zinc finger genes from hematopoietic cells and identification of a novel transregulatory domain KRNB. *J. Biol. Chem.* 274: 35741-35748.
- Gianfrancesco, F., Sanges, R., Esposito, T., Tempesta, S., Rao, E., Rappold, G., Archidiacono, N., Graves, J.A., Forabosco, A. and D'Urso, M. 2001. Differential divergence of three human pseudoautosomal genes and their mouse homologs: implications for sex chromosome evolution. *Genome Res.* 11: 2095-2100.
- Deeb, S.S. 2005. The molecular basis of variation in human color vision. *Clin. Genet.* 67: 369-377.
- Lugtenberg, D., Yntema, H.G., Banning, M.J., Oudakker, A.R., Firth, H.V., Willatt, L., Raynaud, M., Kleefstra, T., Fryns, J.P., Ropers, H.H., Chelly, J., Moraine, C., Gecz, J., van Reeuwijk, J., Nabuurs, S.B., de Vries, B.B., et al. 2006. ZNF674: a new kruppel-associated box-containing zinc-finger gene involved in nonsyndromic X-linked mental retardation. *Am. J. Hum. Genet.* 78: 265-278.
- Liu, J. and Stormo, G.D. 2008. Context-dependent DNA recognition code for C<sub>2</sub>H<sub>2</sub> zinc-finger transcription factors. *Bioinformatics* 24: 1850-1857.

## CHROMOSOMAL LOCATION

Genetic locus: ZNF673 (human) mapping to Xp11.3.

## PRODUCT

ZNF673 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNF673 shRNA Plasmid (h): sc-90921-SH and ZNF673 shRNA (h) Lentiviral Particles: sc-90921-V as alternate gene silencing products.

For independent verification of ZNF673 (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-90921A, sc-90921B and sc-90921C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ZNF673 siRNA (h) is recommended for the inhibition of ZNF673 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  $\mu$ M in 66  $\mu$ l. 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 ZNF673 gene expression knockdown using RT-PCR Primer: ZNF673 (h)-PR: sc-90921-PR (20  $\mu$ l). 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.