SANTA CRUZ BIOTECHNOLOGY, INC.

ZFX siRNA (h): sc-106709

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. ZFX (zinc finger protein, X-linked), also known as ZNF926, is an 805 amino acid nuclear protein that belongs to the Krüppel C_2H_2-type zinc-finger protein family and the ZFX/ZFY subfamily. Containing 13 C_2H_2-type zinc fingers, ZFX is widely expressed and functions as a transcriptional regulator of both embryonic stem cells (ESC) and hematopoietic stem cells (HSC). ZFX is suggested to play a critical role in cell proliferation, cell cycle distribution and apoptosis of human malignant glioma cells. ZFX is highly conserved in vertebrates and exists as two alternatively spliced isoforms.

REFERENCES

1. Sinclair, A.H., et al. 1988. Sequences homologous to ZFY, a candidate human sex-determining gene, are autosomal in marsupials. Nature 336: 780-783.
2. Schneider-Gädicke, A., et al. 1989. ZFX has a gene structure similar to ZFY, the putative human sex determinant, and escapes X inactivation. Cell 57: 1247-1258.
3. Scherer, G., et al. 1989. Duplication of an Xp segment that includes the ZFX locus causes sex inversion in man. Hum. Genet. 81: 291-294.
4. Müller, G., et al. 1989. Mapping the human ZFX locus to Xp21.3 by *in situ* hybridization. Hum. Genet. 82: 82-84.
5. Page, D.C., et al. 1990. Chromosomal localization of ZFX—a human gene that escapes X inactivation—and its murine homologs. Genomics 7: 37-46.
6. Chong, S.S., et al. 1993. Preimplantation prevention of X-linked disease: reliable and rapid sex determination of single human cells by restriction analysis of simultaneously amplified ZFX and ZFY sequences. Hum. Mol. Genet. 2: 1187-1191.
7. Luoh, S.W., et al. 1995. CpG islands in human ZFX and ZFY and mouse Zfx genes: sequence similarities and methylation differences. Genomics 29: 353-363.

CHROMOSOMAL LOCATION

Genetic locus: ZFX (human) mapping to Xp22.11.

PRODUCT

ZFX 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 ZFX shRNA Plasmid (h): sc-106709-SH and ZFX shRNA (h) Lentiviral Particles: sc-106709-V as alternate gene silencing products.

For independent verification of ZFX (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-106709A, sc-106709B and sc-106709C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZFX gene expression knockdown using RT-PCR Primer: ZFX (h)-PR: sc-106709-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.