SANTA CRUZ BIOTECHNOLOGY, INC.

ISX siRNA (m): sc-146303

BACKGROUND

The homeobox DNA-binding domain is a 60 amino acid motif that is conserved among many species and functions to bind DNA via a helix-turn-helix structure, thereby playing a role in transcriptional regulation and the control of gene expression. ISX (intestine-specific homeobox), also known as Pix-1 or RAXLX, is a 245 amino acid protein that localizes to the nucleus and contains one homeobox DNA-binding domain. Present at high levels in intestinal epithelial cells, ISX functions as a transcription factor that regulates intestinal gene expression and may also participate in vitamin A metabolism via the regulation of BCMO1 expression. The gene encoding ISX maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, Neurofibromatosis type 2, autism and schizophrenia.

REFERENCES

1. Tsilchorozidou, T., Menko, F.H., Lalloo, F., Kidd, A., De Silva, R., Thomas, H., Smith, P., Malcolmson, A., Dore, J., Madan, K., Brown, A., Yovos, J.G., Tsaligopoulos, M., Vogiatzis, N., Baser, M.E., Wallace, A.J. and Evans, D.G. 2004. Constitutional rearrangements of chromosome 22 as a cause of neurofibromatosis 2. J. Med. Genet. 41: 529-534.
2. Arinami, T. 2006. Analyses of the associations between the genes of 22q11 deletion syndrome and schizophrenia. J. Hum. Genet. 51: 1037-1045.
3. Choi, M.Y., Romer, A.I., Hu, M., Lepourcelet, M., Mechoor, A., Yesilaltay, A., Krieger, M., Gray, P.A. and Shivdasani, R.A. 2006. A dynamic expression survey identifies transcription factors relevant in mouse digestive tract development. Development 133: 4119-4129.
4. Seino, Y., Miki, T., Kiyonari, H., Abe, T., Fujimoto, W., Kimura, K., Takeuchi, A., Takahashi, Y., Oiso, Y., Iwanaga, T. and Seino, S. 2008. ISX participates in the maintenance of vitamin A metabolism by regulation of β-carotene 15,15'-monooxygenase (Bcmo1) expression. J. Biol. Chem. 283: 4905-4911.
5. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612019. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Isx (mouse) mapping to 8 C1.

PRODUCT

ISX siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ISX shRNA Plasmid (m): sc-146303-SH and ISX shRNA (m) Lentiviral Particles: sc-146303-V as alternate gene silencing products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

ISX siRNA (m) is recommended for the inhibition of ISX 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ISX gene expression knockdown using RT-PCR Primer: ISX (m)-PR: sc-146303-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.