SANTA CRUZ BIOTECHNOLOGY, INC.

TLX2 siRNA (h): sc-94612

BACKGROUND

T-cell leukemia homeobox protein 2 (TLX2), also known as homeobox protein Hox-11L1 (HOX11L1), neural crest homeobox protein (NCX) or ENX, is a 284 amino acid member of the TLX homeobox family. The mouse homolog, Tlx2, has been detected in dorsal-root ganglia, cranial and entric-nerve gangla, parasympathetic ganglia and adrenal glands in mouse embryos and in the adrenal glands, intestine and heart of adult mice. The expression pattern of Tlx2, which is restricted to tissues derived from nerual crest cells, suggests that it may play a role in the proliferation or differentiation of the enteric peripheral nervous system. TLX2, which is localized to the nucleus, is highly homologous to mouse Tlx2, and shares several critical domains, including an enhancer element in the promotor that is crucial for tissue-specific expression. Mutations in the gene encoding mouse Tlx2 lead to congenital anomalies closely resembling neuronal intestinal dysplasia in humans. Thus, TLX2 is thought to play a role in this disease, which is a rare condition characterized by hyperplasia of submucosal plexus with giant submucosal ganglia and increased acetylcholinesterase activity in nerve fiber around submucosal blood vessels.

REFERENCES

1. Dear, T.N., et al. 1993. The HOX11 gene encodes a DNA-binding nuclear transcription factor belonging to a distinct family of homeobox genes. Proc. Natl. Acad. Sci. USA 90: 4431-4435.
2. Hatano, M., et al. 1997. Ncx, a Hox11 related gene, is expressed in a variety of tissues derived from neural crest cells. Anat. Embryol. 195: 419-425.
3. Hatano, M., et al. 1997. A novel pathogenesis of megacolon in Ncx/Hox11L.1 deficient mice. J. Clin. Invest. 100: 795-801.
4. Iitsuka, Y., et al. 1999. An enhancer element for expression of the Ncx (Enx, Hox11L1) gene in neural crest-derived cells. J. Biol. Chem. 274: 24401-24407.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604240. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Kaifi, J.T., et al. 2006. Allelic loss of Hox11L1 gene locus predicts outcome of gastrointestinal stromal tumors. Oncol. Rep. 16: 915-919.

CHROMOSOMAL LOCATION

Genetic locus: TLX2 (human) mapping to 2p13.1.

PRODUCT

TLX2 siRNA (h) is a pool of 2 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 TLX2 shRNA Plasmid (h): sc-94612-SH and TLX2 shRNA (h) Lentiviral Particles: sc-94612-V as alternate gene silencing products.

For independent verification of TLX2 (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-94612A and sc-94612B.

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

TLX2 siRNA (h) is recommended for the inhibition of TLX2 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

TLX2 (D-12): sc-514077 is recommended as a control antibody for monitoring of TLX2 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 TLX2 gene expression knockdown using RT-PCR Primer: TLX2 (h)-PR: sc-94612-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.