SANTA CRUZ BIOTECHNOLOGY, INC.

TLX3 siRNA (h): sc-38804

BACKGROUND

Members of the TLX homeobox gene family are expressed in the developing hindbrain; specifically, the TLX3 gene is expressed in the developing dorsal and ventral medulla oblongata. The TLX3 gene is required for formation of first-order relay visceral sensory neurons in the brainstem. Development of most noradrenergic centers is compromised in both TLX3- and Phox2b-deficient mice. The TLX3 and Phox2 proteins have independent functions in specifying the noradrenergic phenotype. TLX3-deficient newborn mice have a high rate of respiration, a decreased duration of inspiration and frequent apnea; they die shortly after birth from central respiratory failure. In both chick and mouse embryos, TLX3 expression occurs in two longitudinal stripes of postmitotic neurons in the developing hindbrain and spinal cord. Implicated in T-ALL (T cell acute lymphoblastic leukemia), the t(5:14)(q35;q32) translocation increases transcription of the TLX3 gene.

REFERENCES

1. Shirasawa. S., et al. 2000. Rnx deficiency results in congenital central hypoventilation. Nat. Genet. 24: 287-290.
2. Bernard, O.A., et al. 2001. A new recurrent and specific cryptic translocation, t(5;14)(q35;q32), is associated with expression of the HOX11L2 gene in T acute lymphoblastic leukemia. Leukemia 15: 1495-1504.
3. Cinti, R., et al. 2001. Assignment of the HOX11L2 gene to human chromosome band 5q35.1 and of its murine homolog to mouse chromosome bands 11A4-A5 by *in situ* hybridization. Cytogenet. Cell Genet. 92: 354-355.
4. Lee-Kirsch, M.A., et al. 2001. Assignment of the human homeobox 11-like 2 gene (HOX11L2) to chromosome 5q34→q35 by radiation hybrid mapping. Cytogenet. Cell Genet. 92: 358.
5. Qian, Y., et al. 2001. Formation of brainstem (nor)adrenergic centers and first-order relay visceral sensory neurons is dependent on homeodomain protein Rnx/TLX3. Genes Dev. 15: 2533-2545.

CHROMOSOMAL LOCATION

Genetic locus: TLX3 (human) mapping to 5q35.1.

PRODUCT

TLX3 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 TLX3 shRNA Plasmid (h): sc-38804-SH and TLX3 shRNA (h) Lentiviral Particles: sc-38804-V as alternate gene silencing products.

For independent verification of TLX3 (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-38804A, sc-38804B and sc-38804C.

PROTOCOLS

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

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

TLX3 siRNA (h) is recommended for the inhibition of TLX3 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

TLX3 (G-8): sc-514691 is recommended as a control antibody for monitoring of TLX3 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 TLX3 gene expression knockdown using RT-PCR Primer: TLX3 (h)-PR: sc-38804-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.