SANTA CRUZ BIOTECHNOLOGY, INC.

HLX1 siRNA (h): sc-62472

BACKGROUND

HLX1 (homeobox protein HB24) is a 488 amino acid protein encoded by the human gene HLX1. HLX1 belongs to the H2.0 homeobox family and contains one homeobox DNA-binding domain. HLX1 is considered a diverged human homeodomain-containing protein known to be expressed in hematopoietic progenitors and activated lymphocytes. HLX1 is a transcription factor required for TBX21/T-bet-dependent maturation of Th1 cells as well as maintenance of Th1-specific gene expression. It is also involved in embryogenesis and hematopoiesis. Overexpression of HLX1 will cause a marked increase in activated T cells/thymocytes and interleukin-2 receptor expression. Overexpression will also impair the normal development of $CD4^+$ T cells and will prevent the thymus from undergoing normal involution.

REFERENCES

1. Deguchi, Y., et al. 1991. Cloning of a human homeobox gene that resembles a diverged *Drosophila* homeobox gene and is expressed in activated lymphocytes. New Biol. 3: 353-363.
2. Hollington, P., et al. 2004. Expression and localization of homeodomain proteins DLX4, HB9 and HB24 in malignant and benign human colorectal tissues. Anticancer Res. 24: 955-962.
3. Murthi, P., et al. 2006. Homeobox gene HLX1 expression is decreased in idiopathic human fetal growth restriction. Am. J. Pathol. 168: 511-518.
4. Murthi, P., et al. 2006. Homeobox genes are differentially expressed in macrovascular human umbilical vein endothelial cells and microvascular placental endothelial cells. Placenta 28: 219-223.
5. Jawad, M., et al. 2006. Polymorphisms in human homeobox HLX1 and DNA repair RAD51 genes increase the risk of therapy-related acute myeloid leukemia. Blood 108: 3916-3918.
6. Rajaraman, G., et al. 2007. Homeobox gene HLX1 is a regulator of colony stimulating factor-1 dependent trophoblast cell proliferation. Placenta 28: 991-998.
7. Kato, Z., et al. 2007. Interstitial deletion of 1q42.13-q43 with Duane retraction syndrome. J. AAPOS 11: 62-64.

CHROMOSOMAL LOCATION

Genetic locus: HLX (human) mapping to 1q41.

PRODUCT

HLX1 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 HLX1 shRNA Plasmid (h): sc-62472-SH and HLX1 shRNA (h) Lentiviral Particles: sc-62472-V as alternate gene silencing products.

For independent verification of HLX1 (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-62472A, sc-62472B and sc-62472C.

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

HLX1 siRNA (h) is recommended for the inhibition of HLX1 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

HLX1 (1B9): sc-293328 is recommended as a control antibody for monitoring of HLX1 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 HLX1 gene expression knockdown using RT-PCR Primer: HLX1 (h)-PR: sc-62472-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.