SANTA CRUZ BIOTECHNOLOGY, INC.

TAL2 siRNA (h): sc-45599

BACKGROUND

LYL1, TAL1 and TAL2 are part of a family of basic helix-loop-helix (bHLH) proteins implicated in T cell acute leukemia. TAL1 (also designated SCL) is a serine phosphoprotein and basic helix-loop-helix transcription factor known to regulate embryonic hematopoiesis. Lyl-1 (lymphoblastic leukemia derived sequence 1) is a nuclear protein. T-cell acute lymphocytic leukemia-2 protein (TAL2), is involved in T-cell acute lymphoblastic leukemia through a chromosomal translocation involving TAL2 and T-cell receptor β chain genes. TAL2 includes a helix-loop-helix protein dimerization and DNA binding domain that is homologous to TAL1 and Lyl-1 protooncogenes. In leukemic cells TAL2 exists in both a phosphorylated (pp13TAL2) and an unphosphorylated (p12TAL2) form. A chromosomal aberration involving TAL2 may be a cause of some T-cell acute lymphoblastic leukemia (T-ALL). TAL2 interacts with the E2A proteins (E47 and E12) to form bHLH heterodimers that can bind DNA in a sequence-specific manner.

REFERENCES

1. Xia, Y., et al. 1991. TAL2, a helix-loop-helix gene activated by the (7;9)(q34;q32) translocation in human T cell leukemia. Proc. Natl. Acad. Sci. USA 88: 11416-11420.
2. Green, A.R. and Begley, C.G. 1992. SCL and related hemopoietic helix-loop-helix transcription factors. Int. J. Cell Cloning 10: 269-276.
3. Goldfarb, A.N., et al. 1992. T cell acute lymphoblastic leukemia—the associated gene SCL/TAL codes for a 42 kDa nuclear phosphoprotein. Blood 80: 2858-2866.
4. Baer, R. 1993. TAL1, TAL2 and LYL1: a family of basic helix-loop-helix proteins implicated in T cell acute leukaemia. Semin. Cancer Biol. 4: 341-347.
5. Xia, Y., et al. 1994. Products of the TAL2 oncogene in leukemic T cells: bHLH phosphoproteins with DNA-binding activity. Oncogene 9: 1437-1446.
6. Wadman, I., et al. 1994. Specific *in vivo* association between the bHLH and LIM proteins implicated in human T cell leukemia. EMBO J. 13: 4831-4839.
7. Mahajan, M.A., et al. 1996. Association of a novel GTP binding protein, DRG, with TAL oncogenic proteins. Oncogene 12: 2343-2350.

CHROMOSOMAL LOCATION

Genetic locus: TAL2 (human) mapping to 9q31.2.

PRODUCT

TAL2 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 TAL2 shRNA Plasmid (h): sc-45599-SH and TAL2 shRNA (h) Lentiviral Particles: sc-45599-V as alternate gene silencing products.

For independent verification of TAL2 (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-45599A and sc-45599B.

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

TAL2 siRNA (h) is recommended for the inhibition of TAL2 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

TAL2 (1G6): sc-517121 is recommended as a control antibody for monitoring of TAL2 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.

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.