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# Lyl-1 siRNA (h): sc-45688

## BACKGROUND

Lyl-1, 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. TAL2 is a protein involved in T cell acute lymphoblastic leukemia through a chromosomal translocation involving TAL2 and T cell receptor  $\beta$  chain genes. TAL2 includes a helix-loop-helix protein dimerization and DNA-binding domain that is homologous to TAL1 and Lyl-1 proto-oncogenes. Lyl-1 (lymphoblastic leukemia-derived sequence 1) is a nuclear protein. Endogenous Lyl-1 exists in complex with E2 $\alpha$  proteins. Lyl-1 and E2 $\alpha$  protein can form heterodimeric complexes with distinctive DNA-binding properties in hematology cells. Lyl-1 is involved in a chromosomal aberration which causes a form of T cell acute lymphoblastic leukemia (T-ALL).

## REFERENCES

1. Cleary, M.L., Mellentin, J.D., Spies, J. and Smith, S.D. 1988. Chromosomal translocation involving the  $\beta$  T cell receptor gene in acute leukemia. *J. Exp. Med.* 167: 682-687.
2. Mellentin, J.D., Smith, S.D. and Cleary, M.L. 1989. Lyl-1, a novel gene altered by chromosomal translocation in T cell leukemia, codes for a protein with a helix-loop-helix DNA binding motif. *Cell* 58: 77-83.
3. Kuo, S.S., Mellentin, J.D., Copeland, N.G., Gilbert, D.J., Jenkins, N.A. and Cleary, M.L. 1991. Structure, chromosome mapping, and expression of the mouse Lyl-1 gene. *Oncogene* 6: 961-968.
4. Goldfarb, A.N., Goueli, S., Mickelson, D. and Greenberg, J.M. 1992. T cell acute lymphoblastic leukemia—the associated gene SCL/TAL codes for a 42 kDa nuclear phosphoprotein. *Blood* 80: 2858-2866.
5. Trask, B., Fertitta, A., Christensen, M., Youngblom, J., Bergmann, A., Copeland, A., de Jong, P., Mohrenweiser, H., Olsen, A. and Carrano, A. 1993. Fluorescence *in situ* hybridization mapping of human chromosome 19: cytogenetic band location of 540 cosmids and 70 genes or DNA markers. *Genomics* 15: 133-145.
6. SWISS-PROT/TrEMBL (P12980). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>.

## CHROMOSOMAL LOCATION

Genetic locus: LYL1 (human) mapping to 19p13.2.

## PRODUCT

Lyl-1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Lyl-1 shRNA Plasmid (h): sc-45688-SH and Lyl-1 shRNA (h) Lentiviral Particles: sc-45688-V as alternate gene silencing products.

For independent verification of Lyl-1 (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-45688A, sc-45688B and sc-45688C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Lyl-1 siRNA (h) is recommended for the inhibition of Lyl-1 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  $\mu$ M in 66  $\mu$ l. 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

Lyl-1 (C-4): sc-374164 is recommended as a control antibody for monitoring of Lyl-1 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lyl-1 gene expression knockdown using RT-PCR Primer: Lyl-1 (h)-PR: sc-45688-PR (20  $\mu$ l). 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.