



Blk siRNA (h): sc-39227

BACKGROUND

Src is the human homolog of the v-Src gene of the Rous sarcoma virus, also known as avian sarcoma virus or ASV. Src was the first proto-oncogenic non-receptor tyrosine kinase characterized in human. Based on common structural motifs, the Src family is composed of nine members in vertebrates, including Src, Yes, Fgr, Frk, Fyn, Lyn, Hck, Lck and Blk. Src family kinases transduce signals that are involved in the control of a variety of cellular processes, including proliferation, differentiation, motility and adhesion. Src-family kinases contain an amino terminal cell membrane anchor followed by an SH3 domain and an SH2 domain involved in modular association and activation, respectively. Src family kinases are normally maintained in an inactive state and can be activated transiently during cellular events such as mitosis. Different subcellular localizations of Src-family kinases may be important for the regulation of specific cellular processes such as mitogenesis, cyto-skeletal organization and membrane trafficking. The human B lymphocyte kinase gene maps to chromosome 8p23.1 and encodes a 505 amino acid protein, known as Blk. Blk is expressed exclusively by B lymphocytes.

REFERENCES

1. Sakaguchi, A.Y., et al. 1982. Organization of human proto-oncogenes. *Am. J. Hum. Genet.* 34: 175.
2. Tronick, S.R., et al. 1985. Isolation and chromosomal localization of the human fgr protooncogene, a distinct member of the tyrosine kinase gene family. *Proc. Natl. Acad. Sci. USA* 82: 6595-6599.
3. Drebin, J.A., et al. 1995. Molecular cloning and chromosomal localization of the human homologue of a B lymphocyte specific protein tyrosine kinase (Blk). *Oncogene* 10: 477-486.
4. Williams, J.C., et al. 1998. Insights into Src kinase functions: structural comparisons. *Trends Biochem. Sci.* 23: 179-184.
5. Tatossyan, A.G., et al. 2000. Kinases of the Src family: structure and functions. *Biochemistry* 65: 49-58.
6. Korade-Mirnic, Z., et al. 2000. Src kinase-mediated signaling in leukocytes. *J. Leukoc. Biol.* 68: 603-613.
7. Bjorge, J.D., et al. 2000. Selected glimpses into the activation and function of Src kinase. *Oncogene* 19: 5620-5635.

CHROMOSOMAL LOCATION

Genetic locus: BLK (human) mapping to 8p23.1.

PRODUCT

Blk 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Blk shRNA Plasmid (h): sc-39227-SH and Blk shRNA (h) Lentiviral Particles: sc-39227-V as alternate gene silencing products.

For independent verification of Blk (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-39227A, sc-39227B and sc-39227C.

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

APPLICATIONS

Blk siRNA (h) is recommended for the inhibition of Blk 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 μ M in 66 μ 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

Blk (9D10D1): sc-65980 is recommended as a control antibody for monitoring of Blk 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Blk gene expression knockdown using RT-PCR Primer: Blk (h)-PR: sc-39227-PR (20 μ l, 550 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Bernal-Quirós, M., et al. 2013. BANK1 and Blk act through phospholipase C γ 2 in B-cell signaling. *PLoS ONE* 8: e59842.

RESEARCH USE

For research use only, not for use in diagnostic procedures.