

LOK siRNA (h): sc-75685

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. LOK (lymphocyte-oriented kinase), also known as STK10 (serine/threonine kinase 10), is a 968 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Expressed in lymphoid organs, LOK functions to catalyze the ATP-dependent phosphorylation of target proteins, such as MBP (myelin basic protein) and Histone H2A, thereby playing a role in signaling pathways throughout the cell.

REFERENCES

1. Kuramochi, S., et al. 1997. LOK is a novel mouse STE20-like protein kinase that is expressed predominantly in lymphocytes. *J. Biol. Chem.* 272: 22679-22684.
2. Kuramochi, S., et al. 1999. Molecular cloning of the human gene STK10 encoding lymphocyte-oriented kinase, and comparative chromosomal mapping of the human, mouse, and rat homologues. *Immunogenetics* 49: 369-375.
3. Ellinger-Ziegelbauer, H., et al. 2000. STE20-like kinase (SLK), a regulatory kinase for polo-like kinase (Plk) during the G₂/M transition in somatic cells. *Genes Cells* 5: 491-498.
4. Tao, L., et al. 2002. Opposing roles of serine/threonine kinases MEKK1 and LOK in regulating the CD28 responsive element in T-cells. *Biochem. J.* 363: 175-182.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603919. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Walter, S.A., et al. 2003. Stk10, a new member of the polo-like kinase kinase family highly expressed in hematopoietic tissue. *J. Biol. Chem.* 278: 18221-18228.

CHROMOSOMAL LOCATION

Genetic locus: STK10 (human) mapping to 5q35.1.

PRODUCT

LOK 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 LOK shRNA Plasmid (h): sc-75685-SH and LOK shRNA (h) Lentiviral Particles: sc-75685-V as alternate gene silencing products.

For independent verification of LOK (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-75685A, sc-75685B and sc-75685C.

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

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

LOK (D-6): sc-398083 is recommended as a control antibody for monitoring of LOK 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 LOK gene expression knockdown using RT-PCR Primer: LOK (h)-PR: sc-75685-PR (20 μ 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.

PROTOCOLS

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