SANTA CRUZ BIOTECHNOLOGY, INC.

LZK siRNA (m): sc-60977

BACKGROUND

Mixed lineage kinases (MLKs) are a family of protein kinases sharing two leucine zipper-like motifs which mediate protein dimerization, and a kinase domain with a similar primary structure to both the tyrosine-specific and the serine/threonine-specific kinase classes. Members of the MLK family include MLK1, MLK2, MLK3, MLK4, MELK, LZK and DLK. MLKs are expressed in neuronal cells where they are likely to interact between Rac 1/Cdc42, MKK4 and MKK7 in death signaling. Leucine zipper-bearing kinase (LZK) also activates the c-Jun-NH_2 terminal kinase/stress-activated protein kinase (JNK/SAPK) pathway though MKK7. Through its dual leucine zipper-like motif, LZK forms dimers/oligomers which are important for activation of the JNK/SAPK pathway. LZK is predominantly expressed in the pancreas, while moderate expression is observed in adult brain, liver and placenta tissues.

REFERENCES

1. Sakuma, H., et al. 1997. Molecular cloning and functional expression of a cDNA encoding a new member of mixed lineage protein kinase from human brain. J. Biol. Chem. 272: 28622-28629.
2. Ikeda, A., et al. 2001. Identification and characterization of functional domains in a mixed lineage kinase LZK. FEBS Lett. 488: 190-195.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604915. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Masaki, M., et al. 2003. Mixed lineage kinase LZK and antioxidant protein-1 activate NFκB synergistically. Eur. J. Biochem. 270: 76-83.
5. Zhang, Q.G., et al. 2005. Knock-down of POSH expression is neuroprotective through downregulating activation of the MLK3-MKK4-JNK pathway following cerebral ischaemia in the rat hippocampal CA1 subfield. J. Neurochem. 95: 784-795.
6. Pei, D.S., et al. 2005. N-Acetylcysteine inhibit the translocation of mixed lineage kinase-3 from cytosol to plasma membrane during transient brain ischemia in rat hippocampus. Neurosci. Lett. 391: 38-42.

CHROMOSOMAL LOCATION

Genetic locus: Map3k13 (mouse) mapping to 16 B1.

PRODUCT

LZK siRNA (m) 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 LZK shRNA Plasmid (m): sc-60977-SH and LZK shRNA (m) Lentiviral Particles: sc-60977-V as alternate gene silencing products.

For independent verification of LZK (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60977A, sc-60977B and sc-60977C.

RESEARCH USE

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

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

LZK siRNA (m) is recommended for the inhibition of LZK expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LZK gene expression knockdown using RT-PCR Primer: LZK (m)-PR: sc-60977-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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