SANTA CRUZ BIOTECHNOLOGY, INC.

KPI-2 siRNA (m): sc-75398

BACKGROUND

KPI-2 (kinase/phosphatase/inhibitor 2), also known as BREK, LMR2, cprk, AATYK2 or LMTK2 (lemur tyrosine kinase 2), is a 1,503 amino acid single-pass membrane protein belonging to the protein kinase superfamily and the protein tyrosine kinase family. Mainly expressed in skeletal muscle, and weakly in brain and pancreas, KPI-2 contains N-terminal transmembrane helices and a long C-terminal cytoplasmic tail with serine/threonine/tyrosine kinase activity. KPI-2 may be involved in nerve growth factor (NGF)-Trk A signaling, endosomal membrane trafficking and spermatogenesis. KPI-2 localizes to cytoplasmic membrane vesicles and to perinuclear recycling endosomes. KPI-2 is critical for the transition of endocytosed membrane vesicles from early endosomes to recycling endosomes. The gene encoding KPI-2 is a potential therapeutic target for prostate cancer.

REFERENCES

1. Wang, H. and Brautigan, D.L. 2002. A novel transmembrane Ser/Thr kinase complexes with protein phosphatase-1 and inhibitor-2. J. Biol. Chem. 277: 49605-49612.
2. Kawa, S., et al. 2004. Involvement of BREK, a serine/threonine kinase enriched in brain, in NGF signalling. Genes Cells 9: 219-232.
3. Wang, H. and Brautigan, D.L. 2006. Peptide microarray analysis of substrate specificity of the transmembrane Ser/Thr kinase KPI-2 reveals reactivity with cystic fibrosis transmembrane conductance regulator and phosphorylase. Mol. Cell. Proteomics 5: 2124-2130.
4. Kawa, S., et al. 2006. Azoospermia in mice with targeted disruption of the Brek/Lmtk2 (brain-enriched kinase/lemur tyrosine kinase 2) gene. Proc. Natl. Acad. Sci. USA 103: 19344-19349.

CHROMOSOMAL LOCATION

Genetic locus: Lmtk2 (mouse) mapping to 5 G2.

PRODUCT

KPI-2 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 KPI-2 shRNA Plasmid (m): sc-75398-SH and KPI-2 shRNA (m) Lentiviral Particles: sc-75398-V as alternate gene silencing products.

For independent verification of KPI-2 (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-75398A, sc-75398B and sc-75398C.

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

KPI-2 siRNA (m) is recommended for the inhibition of KPI-2 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.

GENE EXPRESSION MONITORING

KPI-2 (H-9): sc-514237 is recommended as a control antibody for monitoring of KPI-2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KPI-2 gene expression knockdown using RT-PCR Primer: KPI-2 (m)-PR: sc-75398-PR (20 µl). 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.