SANTA CRUZ BIOTECHNOLOGY, INC.

KEPI siRNA (m): sc-75380

BACKGROUND

KEPI (kinase-enhanced PP1 inhibitor), also known as PPP1R14C (protein phosphatase 1, regulatory (inhibitor) subunit 14C) or serologically defined breast cancer antigen NY-BR-81, is a 165 amino acid protein that belongs to the PP1 inhibitor family. Localizing to the cytoplasm as well as peripheral membrane, KEPI is expressed in breast cancer tissue, spinal cord, heart, muscle and brain. KEPI acts as an inhibitor of PP1, with inhibitory activity increasing upon phosphorylation. KEPI contains a conserved PP1-binding motif, as well as potential N-myristoylation sites. The gene encoding KEPI maps to human chromosome 6q25.1; decreased expression of this gene has been linked to breast cancer. KEPI may also have a role in the regulation of Egr-1 via the MEK-ERK MAPK pathway.

REFERENCES

1. Liu, Q.R., et al. 2002. KEPI, a PKC-dependent protein phosphatase 1 inhibitor regulated by morphine. J. Biol. Chem. 277: 13312-13320.
2. Gong, J.P., et al. 2005. Mouse brain localization of the protein kinase C-enhanced phosphatase 1 inhibitor KEPI (kinase C-enhanced PP1 inhibitor). Neuroscience 132: 713-727.
3. Wenzel, K., et al. 2007. Expression of the protein phosphatase 1 inhibitor KEPI is downregulated in breast cancer cell lines and tissues and involved in the regulation of the tumor suppressor EGR1 via the MEK-ERK pathway. Biol. Chem. 388: 489-495.
4. Scholz, S.W., et al. 2009. SNCA variants are associated with increased risk for multiple system atrophy. Ann. Neurol. 65: 610-614.
5. Eto, M. 2009. Regulation of cellular protein phosphatase-1 (PP1) by phosphorylation of the CPI-17 family, C-kinase-activated PP1 inhibitors. J. Biol. Chem. 284: 35273-35277.
6. Daskalow, K., et al. 2010. Generation of an antibody against the protein phosphatase 1 inhibitor KEPI and characterization of the epitope. Anticancer Res. 30: 1573-1578.
7. Drgonova, J., et al. 2010. Effect of KEPI (Ppp1r14c) deletion on morphine analgesia and tolerance in mice of different genetic backgrounds: when a knockout is near a relevant quantitative trait locus. Neuroscience 165: 882-895.

CHROMOSOMAL LOCATION

Genetic locus: Ppp1r14c (mouse) mapping to 10 A1.

PRODUCT

KEPI 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 KEPI shRNA Plasmid (m): sc-75380-SH and KEPI shRNA (m) Lentiviral Particles: sc-75380-V as alternate gene silencing products.

For independent verification of KEPI (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-75380A, sc-75380B and sc-75380C.

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

KEPI siRNA (m) is recommended for the inhibition of KEPI 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 KEPI gene expression knockdown using RT-PCR Primer: KEPI (m)-PR: sc-75380-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.