SANTA CRUZ BIOTECHNOLOGY, INC.

UHMK1 siRNA (m): sc-106671

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. UHMK1 (U2AF homology motif kinase 1), also known as KIS (kinase interacting with stathmin) or KIST, is a 419 amino acid nuclear protein that contains one protein kinase domain and one RRM domain and belongs to the Ser/Thr protein kinase family. Expressed in a variety of tissues with highest levels present in placenta, kidney and skeletal muscle, UHMK1 functions to catalyze the ATP-dependent phosphorylation of target proteins, such as p27, and is thought to be involved in cell cycle regulation, as well as in the trafficking and processing of RNA. Multiple isoforms of UHMK1 exist due to alternative splicing events.

REFERENCES

1. Maucuer, A., et al. 1995. Stathmin interaction with a putative kinase and coiled-coil-forming protein domains. Proc. Natl. Acad. Sci. USA 92: 3100-3104.
2. Boehm, M., et al. 2002. A growth factor-dependent nuclear kinase phosphorylates $p27^{Kip1}$ and regulates cell cycle progression. EMBO J. 21: 3390-3401.
3. Bièche, I., et al. 2003. Quantitative RT-PCR reveals a ubiquitous but preferentially neural expression of the KIS gene in rat and human. Brain Res. Mol. Brain Res. 114: 55-64.
4. Puri, V., et al. 2007. Fine mapping by genetic association implicates the chromosome 1q23.3 gene UHMK1, encoding a serine/threonine protein kinase, as a novel schizophrenia susceptibility gene. Biol. Psychiatry 61: 873-879.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 608849. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Uhmk1 (mouse) mapping to 1 H3.

PRODUCT

UHMK1 siRNA (m) is a pool of 2 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 UHMK1 shRNA Plasmid (m): sc-106671-SH and UHMK1 shRNA (m) Lentiviral Particles: sc-106671-V as alternate gene silencing products.

For independent verification of UHMK1 (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-106671A and sc-106671B.

PROTOCOLS

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

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

UHMK1 siRNA (m) is recommended for the inhibition of UHMK1 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

UHMK1 (C-2): sc-393605 is recommended as a control antibody for monitoring of UHMK1 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 UHMK1 gene expression knockdown using RT-PCR Primer: UHMK1 (m)-PR: sc-106671-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.