SANTA CRUZ BIOTECHNOLOGY, INC.

HIPK1 siRNA (m): sc-39049

BACKGROUND

The homeodomain-interacting protein kinase (HIPK) family, which includes HIPK1, HIPK2 and HIPK3, are evolutionarily conserved nuclear serine/threonine kinases that interact with homeoproteins. The HIPK family of proteins act as transcriptional regulators, chromatin modifiers, cytoplasmic signal transducers, transmembrane proteins, and the E2 component of SUMO ligase. HIPK1 is a 1,210 amino acid protein that is ubiquitously expressed with highest levels in skeletal muscle and heart. HIPK1 may play a role as a corepressor for homeodomain transcription factors and may phosphorylate Daxx in response to stress. It is suggested that HIPK1 may be involved in malignant squamous cell tumor formation. Four isoforms exist due to alternative splicing events.

REFERENCES

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2. Ecsedy, J.A., et al. 2003. Homeodomain-interacting protein kinase 1 modulates Daxx localization, phosphorylation, and transcriptional activity. Mol. Cell. Biol. 23: 950-960.
3. Kondo, S., et al. 2003. Characterization of cells and gene-targeted mice deficient for the p53-binding kinase homeodomain-interacting protein kinase 1 (HIPK1). Proc. Natl. Acad. Sci. USA 100: 5431-5436.
4. Li, X., et al. 2005. Tumor necrosis factor α-induced desumoylation and cytoplasmic translocation of homeodomain-interacting protein kinase 1 are critical for apoptosis signal-regulating kinase 1-JNK/p38 activation. J. Biol. Chem. 280: 15061-15070.
5. Aikawa, Y., et al. 2006. Roles of HIPK1 and HIPK2 in AML1- and p300-dependent transcription, hematopoiesis and blood vessel formation. EMBO J. 25: 3955-3965.
6. Sekito, A., et al. 2006. DJ-1 interacts with HIPK1 and affects H_2O_2-induced cell death. Free Radic. Res. 40: 155-165.
7. Isono, K., et al. 2006. Overlapping roles for homeodomain-interacting protein kinases HIPK1 and HIPK2 in the mediation of cell growth in response to morphogenetic and genotoxic signals. Mol. Cell. Biol. 26: 2758-2771.

CHROMOSOMAL LOCATION

Genetic locus: Hipk1 (mouse) mapping to 3 F2.2.

PRODUCT

HIPK1 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 HIPK1 shRNA Plasmid (m): sc-39049-SH and HIPK1 shRNA (m) Lentiviral Particles: sc-39049-V as alternate gene silencing products.

For independent verification of HIPK1 (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-39049A, sc-39049B and sc-39049C.

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

HIPK1 siRNA (m) is recommended for the inhibition of HIPK1 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

HIPK1 (SR-5): sc-100382 is recommended as a control antibody for monitoring of HIPK1 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 HIPK1 gene expression knockdown using RT-PCR Primer: HIPK1 (m)-PR: sc-39049-PR (20 µl, 599 bp). 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.