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SANTA CRUZ BIOTECHNOLOGY, INC.

Nek10 siRNA (m): sc-149903

BACKGROUND

NIMA was originally discovered in *Aspergillus nidulans* as a protein that is necessary for entry into mitosis. Several NIMA-related mammalian proteins have since been identified. Nek10 (NIMA (never in mitosis gene a)-related kinase 10) is a 712 amino acid protein belonging to the NIMA subfamily of kinases and functions as a magnesium-dependent serine/threonine protein kinase. Kinases of the NIMA subfamily are typically involved in genotoxic stress response and DNA replication. Nek10 is expressed in brain and may contain a 14-3-3 interaction motif in its C-terminus. The gene encoding Nek10 has been localized to a region on chromosome 3 that may contribute to vulnerability to addictions. Due to alternative splicing events, three isoforms exist for Nek10.

REFERENCES

1. Hanks, S.K. 2003. Genomic analysis of the eukaryotic protein kinase superfamily: a perspective. Genome Biol. 4: 111.
2. Caenepeel, S., et al. 2004. The mouse kinome: discovery and comparative genomics of all mouse protein kinases. Proc. Natl. Acad. Sci. USA 101: 11707-11712.
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4. Cloutier, M., et al. 2005. Characterization of a poplar NIMA-related kinase PNek1 and its potential role in meristematic activity. FEBS Lett. 579: 4659-4665.
5. Parker, J.D., et al. 2007. Phylogenetic analysis of the neks reveals early diversification of ciliary-cell cycle kinases. PLoS ONE 2: e1076.
6. O'regan, L., et al. 2007. Mitotic regulation by NIMA-related kinases. Cell Div. 2: 25.
7. Ishiguro, H., et al. 2007. Variation in a bicarbonate co-transporter gene family member SLC4A7 is associated with propensity to addictions: a study using fine-mapping and three samples. Addiction 102: 1320-1325.
8. Rellos, P., et al. 2007. Structure and regulation of the human Nek2 centrosomal kinase. J. Biol. Chem. 282: 6833-6842.

CHROMOSOMAL LOCATION

Genetic locus: Nek10 (mouse) mapping to 14 A2.

PRODUCT

Nek10 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 Nek10 shRNA Plasmid (m): sc-149903-SH and Nek10 shRNA (m) Lentiviral Particles: sc-149903-V as alternate gene silencing products.

For independent verification of Nek10 (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-149903A, sc-149903B and sc-149903C.

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

Nek10 siRNA (m) is recommended for the inhibition of Nek10 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

Nek10 (97.1): sc-100434 is recommended as a control antibody for monitoring of Nek10 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 Nek10 gene expression knockdown using RT-PCR Primer: Nek10 (m)-PR: sc-149903-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.