SANTA CRUZ BIOTECHNOLOGY, INC.

NKIAMRE siRNA (h): sc-37582

BACKGROUND

The cell division cycle is regulated by a closely-related family of protein kinases known as cyclin-dependent kinases, or Cdks. Cdk family members share high levels of sequence homology between species, suggesting that evolutionarily conserved mechanisms of cell cycle control may exist. NKIAMRE, also designated cyclin-dependent kinase-like 3, is a member of the Cdk family. The human NKIAMRE gene maps to chromosome 5q31.1 and encodes a 455 amino acid protein, which is believed to be a tumor suppressor. The NKIAMRE gene was identified as a gene absent in human acute leukemia and myelodysplasia patients with interstitial deletions in chromosome arm 5q. This deleted region may contain tumor suppressor loci that are necessary for normal hematopoiesis. NKIAMRE shares close homology to the Cdc2-related kinases NKIATRE, KKIALRE, PISSLRE, PITALRE and KKIAMRE, containing both conserved inhibitory phosphorylation sites and a putative cyclin-binding domain. These kinases influence cell behavior through restricting cell growth or maintaining differentiation.

REFERENCES

1. Grana, X., et al. 1994. PISSLRE, a human novel Cdc2-related protein kinase. Oncogene 9: 2097-2103.
2. De Luca, A., et al. 1997. Cdc2-related kinase PITALRE phosphorylates pRb exclusively on serine and is widely expressed in human tissues. J. Cell. Physiol. 172: 265-273.
3. Midmer, M., et al. 1999. Identification of NKIAMRE, the human homologue to the mitogen-activated protein kinase-/cyclin-dependent kinase-related protein kinase NKIATRE, and its loss in leukemic blasts with chromosome arm 5q deletion. Cancer Res. 59: 4069-4074.
4. Haq, R., et al. 2001. NKIATRE is a novel conserved Cdc2-related kinase. Genomics 71: 131-141.
5. LocusLink Report (LocusID: 51265). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: CDKL3 (human) mapping to 5q31.1.

PRODUCT

NKIAMRE siRNA (h) 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 NKIAMRE shRNA Plasmid (h): sc-37582-SH and NKIAMRE shRNA (h) Lentiviral Particles: sc-37582-V as alternate gene silencing products.

For independent verification of NKIAMRE (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37582A, sc-37582B and sc-37582C.

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

NKIAMRE siRNA (h) is recommended for the inhibition of NKIAMRE expression in human 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 NKIAMRE gene expression knockdown using RT-PCR Primer: NKIAMRE (h)-PR: sc-37582-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.