SANTA CRUZ BIOTECHNOLOGY, INC.

NOK siRNA (h): sc-95937

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. NOK (novel oncogene with kinase domain), also known as STYK1 (serine/threonine/tyrosine kinase 1), is a 422 amino acid single-pass membrane protein that belongs to the protein kinase superfamily. Highly expressed in brain, prostate and placenta with lower levels of expression in non-cancerous lung tissue, NOK functions as a receptor protein tyrosine kinase that influences cell proliferation, differentiation and survival. NOK contains one protein kinase domain and is overexpressed in ovarian cancer, cervical cancer and chronic myelogenous leukemia, suggesting an important role for NOK in tumorigenesis.

REFERENCES

1. Ye, X., et al. 2003. Isolation and characterization of a human putative receptor protein kinase cDNA STYK1. Mol. Biol. Rep. 30: 91-96.
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3. Liu, L., et al. 2004. A novel protein tyrosine kinase NOK that shares homology with platelet- derived growth factor/fibroblast growth factor receptors induces tumorigenesis and metastasis in nude mice. Cancer Res. 64: 3491-3499.
4. Moriai, R., et al. 2006. Diagnostic relevance of overexpressed NOK mRNA in breast cancer. Anticancer Res. 26: 4969-4973.
5. Amachika, T., et al. 2007. Diagnostic relevance of overexpressed mRNA of novel oncogene with kinase-domain (NOK) in lung cancers. Lung Cancer 56: 337-340.
6. Greenman, C., et al. 2007. Patterns of somatic mutation in human cancer genomes. Nature 446: 153-158.
7. Kimbro, K.S., et al. 2008. A novel gene STYK1/NOK is upregulated in estrogen receptor-α negative estrogen receptor-β positive breast cancer cells following estrogen treatment. Mol. Biol. Rep. 35: 23-27.
8. Xu, F., et al. 2008. Preparation of anti-hNOK antibodies and expression examination of NOK in the lung cancer tissues. Sheng Wu Gong Cheng Xue Bao 24: 480-484.

CHROMOSOMAL LOCATION

Genetic locus: STYK1 (human) mapping to 12p13.2.

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.

PRODUCT

NOK 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 NOK shRNA Plasmid (h): sc-95937-SH and NOK shRNA (h) Lentiviral Particles: sc-95937-V as alternate gene silencing products.

For independent verification of NOK (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-95937A, sc-95937B and sc-95937C.

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

NOK siRNA (h) is recommended for the inhibition of NOK 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.

GENE EXPRESSION MONITORING

NOK (2H2F10): sc-81701 is recommended as a control antibody for monitoring of NOK 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NOK gene expression knockdown using RT-PCR Primer: NOK (h)-PR: sc-95937-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.