SANTA CRUZ BIOTECHNOLOGY, INC.

Neurofibromin siRNA (h): sc-36036

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The Power to Question

BACKGROUND

Neurofibromatosis type 1 (NF1), or von Reckinghausen neurofibromatosis, is one of the most common autosomal dominant disorders in humans. Early linkage analysis mapped the NF1 gene to chromosome 17. The predicted NF1 transcript encodes the 2,818 amino acid protein Neurofibromin, also designated NF1-GAP-related protein (NF1GRP). By sequence analysis, similarity has been demonstrated within a small region of Neurofibromin and members of the Ras GAP gene family. Functionally, Neurofibromin has been shown by biochemical analysis involving RAS-GAP hydrolysis and functional complementation in yeast to further resemble GAP protein. The Neurofibromin protein is expressed at relatively constant levels in a broad range of cell lines and tissues including brain, lung, liver, kidney, spleen, muscle and colon. Although little is known regarding the function of Neurofibromin, the homology with the catalytic domain of proteins with GTPase activity suggests that Neurofibromin may also interact *in vivo* with Ras proteins.

REFERENCES

1. Riccardi, V.M., et al. 1986. Neurofibromatosis: Phenotype, Natural History, and Pathogenesis. Johns Hopkins Univ. Press, Baltimore.
2. Goldgar, D.E., et al. 1989. Multipoint linkage analysis in neurofibromatosis type 1: an international collaboration. Am. J. Hum. Genet. 44: 6-12.

CHROMOSOMAL LOCATION

Genetic locus: NF1 (human) mapping to 17q11.2.

PRODUCT

Neurofibromin 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 Neurofibromin shRNA Plasmid (h): sc-36036-SH and Neurofibromin shRNA (h) Lentiviral Particles: sc-36036-V as alternate gene silencing products.

For independent verification of Neurofibromin (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-36036A, sc-36036B and sc-36036C.

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

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

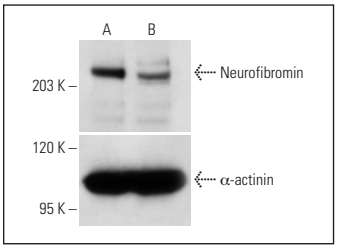
GENE EXPRESSION MONITORING

Neurofibromin (H-12): sc-376886 is recommended as a control antibody for monitoring of Neurofibromin 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 Neurofibromin gene expression knockdown using RT-PCR Primer: Neurofibromin (h)-PR: sc-36036-PR (20 µl, 464 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Neurofibromin siRNA (h): sc-36036. Western blot analysis of Neurofibromin expression in non-transfected control (**A**) and Neurofibromin siRNA transfected (**B**) HeLa cells. Blot probed with Neurofibromin (D): sc-67. α-actinin (H-2): sc-17829 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Kraniak, J.M., et al. 2010. The role of Neurofibromin in N-Ras mediated AP-1 regulation in malignant peripheral nerve sheath tumors. Mol. Cell. Biochem. 344: 267-276.
2. Lulla, A.R., et al. 2017. miR-6883 family miRNAs target CDK4/6 to induce G1Phase cell-cycle arrest in colon cancer cells. Cancer Res. 77: 6902-6913.
3. Kahen, E.J., et al. 2018. Neurofibromin level directs Ras pathway signaling and mediates sensitivity to targeted agents in malignant peripheral nerve sheath tumors. Oncotarget 9: 22571-22585.

RESEARCH USE

For research use only, not for use in diagnostic procedures.