SANTA CRUZ BIOTECHNOLOGY, INC.

# NF2 siRNA (h): sc-36052

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*The Power to Question*

## BACKGROUND

Neurofibromatosis type 2 (NF2) is a dominantly inherited disorder characterized by the occurance of bilateral vestibular schwannomas and other central nervous system tumors, including multiple meningiomas. NF2 occurs in about one of 40,000 live births. The NF2 gene is highly penetrant; NF2-affected individuals have a 95% chance of developing bilateral vestibular schwannomas. NF2 is distinct from NF1, which is characterized by an incidence of one in 4,000, maps to chromosome 17 and encodes a protein designated Neurofibromin, which is a large protein with a GAP domain. Genetic linkage studies of both sporadic and familial tumors suggest that NF2 is caused by inactivation of a tumor suppressor gene that maps on chromosome 22q12.2 and encodes a 595 amino acid protein whose function appears to be mediated by interaction with the cytoskeleton.

## REFERENCES


1. Rouleau, G.A., et al. 1990. Flanking markers bracket the neurofibromatosis type 2 (NF2) gene on chromosome 22. Am. J. Hum. Genet. 46: 323-328.
2. Narod, S.A., et al. 1992. Neurofibromatosis type 2 appears to be a genetically homogeneous disease. Am. J. Hum. Genet. 51: 486-496.
3. Evans, D.G.R., et al. 1992. A genetic study of type 2 neurofibromatosis in the United Kingdom. I. Prevalence, mutation rate, fitness and confirmation of maternal transmission effect on severity. J. Med. Genet. 29: 841-846.
4. DeClue, J.E., et al. 1992. Abnormal regulation of mammalian $p21^{ras}$ contributes to malignant tumor growth in von Recklinghausen (type 1) neurofibromatosis. Cell 69: 265-273.


## CHROMOSOMAL LOCATION

Genetic locus: NF2 (human) mapping to 22q12.2.

## PRODUCT

NF2 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 NF2 shRNA Plasmid (h): sc-36052-SH and NF2 shRNA (h) Lentiviral Particles: sc-36052-V as alternate gene silencing products.

For independent verification of NF2 (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-36052A, sc-36052B and sc-36052C.

## 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

NF2 siRNA (h) is recommended for the inhibition of NF2 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

NF2 (B-12): sc-55575 is recommended as a control antibody for monitoring of NF2 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 NF2 gene expression knockdown using RT-PCR Primer: NF2 (h)-PR: sc-36052-PR (20 µl, 491 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Lee, H., et al. 2016. Neurofibromatosis 2 (NF2) controls the invasiveness of glioblastoma through YAP-dependent expression of CYR61/CCN1 and miR-296-3p. Biochim. Biophys. Acta 1859: 599-611.
2. Oien, D.B., et al. 2021. Quinacrine has preferential anticancer effects on mesothelioma cells with inactivating NF2 mutations. Front. Pharmacol. 12: 750352.
3. Park, J.J., et al. 2024. FRMD6 determines the cell fate towards senescence: involvement of the Hippo-YAP-CCN3 axis. Cell Death Differ. E-published.


## RESEARCH USE

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