SANTA CRUZ BIOTECHNOLOGY, INC.

N-Myc siRNA (h): sc-36003

BACKGROUND

The v-Myc oncogene, initially identified in the MC29 avian retrovirus, causes myelocytomas, carcinomas, sarcomas and lymphomas, and belongs to a family of oncogenes conserved throughout evolution. In humans, the family consists of five genes: c-Myc, N-Myc, R-Myc, L-Myc and B-Myc. Amplification of the N-Myc gene has been found in human neuroblastomas and cell lines. The extent of N-Myc amplification correlates well with the stage of neuroblastoma disease. Immunological studies have shown that the human N-Myc gene encodes a nuclear phosphoprotein that exhibits relatively short (30 min) half life *in vivo*. The prototype member of the family, c-Myc p67, binds DNA in a sequence-specific manner subsequent to dimerization with a second basic region helix-loop-helix leucine zipper motif protein, designated Max.

REFERENCES

1. Schwab, M., et al. 1983. Amplified DNA with limited homology to Myc cellular oncogene is shared by human neuroblastoma cell lines and a neuroblastoma tumor. Nature 305: 245-248.
2. Brodeur, G.M., et al. 1984. Amplification of N-Myc in untreated human neuroblastomas correlates with advanced disease stage. Science 224: 1121-1124.
3. Cole, M.D. 1986. The Myc oncogene: its role in transformation and differentiation. Annu. Rev. Genet. 20: 361-384.

CHROMOSOMAL LOCATION

Genetic locus: MYCN (human) mapping to 2p24.3.

PRODUCT

N-Myc 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 N-Myc shRNA Plasmid (h): sc-36003-SH and N-Myc shRNA (h) Lentiviral Particles: sc-36003-V as alternate gene silencing products.

For independent verification of N-Myc (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-36003A, sc-36003B and sc-36003C.

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

N-Myc siRNA (h) is recommended for the inhibition of N-Myc 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

N-Myc (B8.4.B): sc-53993 is recommended as a control antibody for monitoring of N-Myc 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 N-Myc gene expression knockdown using RT-PCR Primer: N-Myc (h)-PR: sc-36003-PR (20 µl, 538 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lange, I. and Koomoa, D.L. 2014. MycN promotes TRPM7 expression and cell migration in neuroblastoma through a process that involves polyamines. FEBS Open Bio 4: 966-975.
2. Wang, H., et al. 2017. JQ1 synergizes with the Bcl-2 inhibitor ABT-263 against MYCN-amplified small cell lung cancer. Oncotarget 8: 86312-86324.
3. Bishayee, K., et al. 2019. Targeting the difficult-to-drug CD71 and MYCN with gambogic acid and vorinostat in a class of neuroblastomas. Cell. Physiol. Biochem. 53: 258-280.
4. Qin, X.Y., et al. 2020. Lipid desaturation-associated endoplasmic reticulum stress regulates MYCN gene expression in hepatocellular carcinoma cells. Cell Death Dis. 11: 66.
5. Liu, T., et al. 2022. MYCN mRNA degradation and cancer suppression by a selective small-molecule inhibitor in MYCN-amplified neuroblastoma. Front. Oncol. 12: 1058726.

RESEARCH USE

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