

# c-Myc siRNA (h): sc-29226

## BACKGROUND

c-Myc-, N-Myc- and L-Myc-encoded proteins function in cell proliferation, differentiation and neoplastic disease. Amplification of the c-Myc gene has been found in several types of human tumors including lung, breast and colon carcinomas. The presence of three sequence motifs in the c-Myc COOH terminus, including the leucine zipper, the helix-loop-helix and a basic region, provided initial evidence for a sequence-specific binding function. A basic region helix-loop-helix leucine zipper motif (bHLH-Zip) protein, designated Max, specifically associates with c-Myc, N-Myc and L-Myc proteins. The Myc-Max complex binds to DNA in a sequence-specific manner under conditions where neither Max nor Myc exhibits appreciable binding. Max can also form heterodimers with at least two additional bHLH-Zip proteins, Mad 1 and Mxi1, and Mad 1-Max dimers have been shown to repress transcription through interaction with mSin3.

## CHROMOSOMAL LOCATION

Genetic locus: MYC (human) mapping to 8q24.21.

## PRODUCT

c-Myc siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see c-Myc shRNA Plasmid (h): sc-29226-SH and c-Myc shRNA (h) Lentiviral Particles: sc-29226-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

c-Myc siRNA (h) is recommended for the inhibition of c-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  $\mu$ M in 66  $\mu$ l. 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.

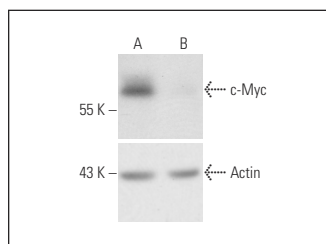
## GENE EXPRESSION MONITORING

c-Myc (9E10): sc-40 is recommended as a control antibody for monitoring of c-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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor c-Myc gene expression knockdown using RT-PCR Primer: c-Myc (h)-PR: sc-29226-PR (20  $\mu$ l, 361 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## DATA



c-Myc siRNA (h): sc-29226. Western blot analysis of c-Myc expression in non-transfected control (A) and c-Myc siRNA transfected (B) HeLa cells. Blot probed with c-Myc (9E10): sc-40. Actin (I-19): sc-1616 used as specificity and loading control.

## SELECT PRODUCT CITATIONS

- Lin, L., et al. 2008. The parafibromin tumor suppressor protein inhibits cell proliferation by repression of the c-myc proto-oncogene. *Proc. Natl. Acad. Sci. USA* 105: 17420-17425.
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- Liao, P., et al. 2017. Mutant p53 gains its function via c-Myc activation upon CDK4 phosphorylation at Serine 249 and consequent PIN1 binding. *Mol. Cell* 68: 1134-1146.e6.
- Chapalamadugu, K.C., et al. 2018. Physiological role of Kv $\beta$ 2 (AKR6) in murine skeletal muscle growth and regulation. *Acta Physiol.* 224: e13083.
- Niehus, S.E., et al. 2019. Myc/Max dependent intronic long antisense noncoding RNA, EVA1A-AS, suppresses the expression of Myc/Max dependent anti-proliferating gene EVA1A in a U2 dependent manner. *Sci. Rep.* 9: 17319.
- Godel, M., et al. 2020. Small nucleolar RNAs determine resistance to doxorubicin in human osteosarcoma. *Int. J. Mol. Sci.* 21: 4500.
- Qiu, X., et al. 2021. SOX2-dependent expression of dihydroorotate dehydrogenase regulates oral squamous cell carcinoma cell proliferation. *Int. J. Oral Sci.* 13: 3.

## RESEARCH USE

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