

# c-Myc siRNA (m): sc-29227

## 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.

## REFERENCES

- Alitalo, K., et al. 1983. Homogeneously staining chromosomal regions contain amplified copies of an abundantly expressed cellular oncogene (c-Myc) in malignant neuroendocrine cells from a human colon carcinoma. *Proc. Natl. Acad. Sci. USA* 80: 1707-1711.
- Nau, M.N., et al. 1985. L-Myc, a new Myc-related gene amplified and expressed in human small cell lung cancer. *Nature* 318: 69-73.

## CHROMOSOMAL LOCATION

Genetic locus: Myc (mouse) mapping to 15 D1.

## PRODUCT

c-Myc siRNA (m) is a pool of 4 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see c-Myc shRNA Plasmid (m): sc-29227-SH and c-Myc shRNA (m) Lentiviral Particles: sc-29227-V as alternate gene silencing products.

For independent verification of c-Myc (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29227A, sc-29227B, sc-29227C and sc-29227D.

## 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  $\mu$ 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 (m) is recommended for the inhibition of c-Myc expression in mouse 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 (m)-PR: sc-29227-PR (20  $\mu$ l, 498 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Mu, W.L., et al. 2015. Sox2 deacetylation by Sirt1 is involved in mouse somatic reprogramming. *Stem Cells* 33: 2135-2147.
- Prashad, N. 2018. MiR-665 targets c-Myc and HDAC8 to inhibit murine neuroblastoma cell growth. *Oncotarget* 9: 33186-33201.
- Zhang, H.L., et al. 2019. c-Myc maintains the self-renewal and chemoresistance properties of colon cancer stem cells. *Oncol. Lett.* 17: 4487-4493.
- Liang, M., et al. 2019. IL-11 is essential in promoting osteolysis in breast cancer bone metastasis via RANKL-independent activation of osteoclastogenesis. *Cell Death Dis.* 10: 353.
- Kasiappan, R., et al. 2019. Reactive oxygen species (ROS)-inducing triterpenoid inhibits rhabdomyosarcoma cell and tumor growth through targeting Sp transcription factors. *Mol. Cancer Res.* 17: 794-805.
- Parmar, N., et al. 2020. *Leishmania donovani* subverts host immune response by epigenetic reprogramming of macrophage M(IL1polysaccharides + IFN- $\gamma$ )/M(IL-10) polarization. *J. Immunol.* 204: 2762-2778.
- Fan, W., et al. 2021. SIRT1 regulates sphingolipid metabolism and neural differentiation of mouse embryonic stem cells through c-Myc-SMPDL3B. *Elife* 10: e67452.
- Yan, C.H., et al. 2022. AMPK $\alpha$ 2 controls the anti-atherosclerotic effects of fish oils by modulating the SUMOylation of GPR120. *Nat. Commun.* 13: 7721.

## RESEARCH USE

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