SANTA CRUZ BIOTECHNOLOGY, INC.

Miz-1 siRNA (m): sc-38086

BACKGROUND

The Myc family, including c-Myc, N-Myc and L-Myc, are nuclear proteins with relatively short half lives that contribute an important role in cellular processes such as proliferation, differentiation, apoptosis and transformation. The c-Myc protein activates transcription as part of a heteromeric complex with a number of interacting partners, including Max and Mxi 1; however the transforming properties of the Myc proto-oncogene are believed to be associated with Myc-mediated transcriptional repression. A POZ domain Zn finger protein, designated Miz-1 for Myc-interacting Zn finger protein-1, is a specific target of Myc-induced gene repression. Miz-1 interacts with Myc, but not Max or other Myc partners, and binding of Myc to Miz-1 requires the helix-loop-helix domain of Myc and a short amphipathic helix located in the carboxy-terminus of Miz-1. Miz-1 associates with DNA elements on the adenovirus major late and cyclin D1 promoters and activates transcription of both promoters. Expression of Miz-1 induces potent growth arrest function, and this latency is reversed by the addition of Myc.

REFERENCES

1. 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.
2. 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.
3. Nisen, P.D., et al. 1986. Enhanced expression of the N-Myc gene in Wilms' tumors. Cancer Res. 46: 6217-6222.
4. Tommerup, N., et al. 1995. Isolation and fine mapping of 16 novel human zinc finger-encoding cDNAs identify putative candidate genes for developmental and malignant disorders. Genomics 27: 259-264.
5. Peukert, K., et al. 1997. An alternative pathway for gene regulation by Myc. EMBO J. 16: 5672-5686.
6. Schneider, A., et al. 1997. Association of Myc with the zinc-finger protein Miz-1 defines a novel pathway for gene regulation by Myc. Curr. Top. Microbiol. Immunol. 224: 137-146.

CHROMOSOMAL LOCATION

Genetic locus: Zbtb17 (mouse) mapping to 4 E1.

PRODUCT

Miz-1 siRNA (m) 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 Miz-1 shRNA Plasmid (m): sc-38086-SH and Miz-1 shRNA (m) Lentiviral Particles: sc-38086-V as alternate gene silencing products.

For independent verification of Miz-1 (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-38086A, sc-38086B and sc-38086C.

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

Miz-1 siRNA (m) is recommended for the inhibition of Miz-1 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 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

Miz-1 (B-10): sc-136985 is recommended as a control antibody for monitoring of Miz-1 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 Miz-1 gene expression knockdown using RT-PCR Primer: Miz-1 (m)-PR: sc-38086-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.