SANTA CRUZ BIOTECHNOLOGY, INC.

Mimitin siRNA (m): sc-61045

BACKGROUND

The Myc family represents nuclear transcription factors that contribute significantly to cellular proliferation, differentiation, apoptosis and transformation. The Myc family of cellular oncogenes includes c-Myc, N-Myc, L-Myc, S-Myc and B-Myc. Myc-induced mitochondrial protein (MMTN), also designated Mimitin, localizes exclusively to the mitochondrion. Mimitin belongs to the complex I NDUFA12 subunit family of proteins and is highly expressed in esophageal squamous cell carcinoma (ESCC) cells. Mimitin plays an important role in Myc-dependent cell proliferation. It is a direct transcriptional target of c-Myc, which mediates gene repression by inhibiting the DNA binding protein Miz-1 and inhibiting cell growth. However, Mimitin expression in ESCC has no affect on the histopathological stage or grade of the cancer.

REFERENCES

1. Schmidt, E.V. 1996. MYC family ties. Nat. Genet. 14: 8-10.
2. Nesbit, C.E., et al. 1998. Differential apoptotic behaviors of c-myc, N-myc, and L-myc oncoproteins. Cell Growth Differ. 9: 731-741.
3. Eilers, M. 1999. Control of cell proliferation by Myc family genes. Mol. Cells 9: 1-6.
4. Kuramoto, N., et al. 1999. Gene transcription through Myc family members in eukaryotic cells. Jpn. J. Pharmacol. 80: 103-109.
5. Sugimoto, K.J., et al. 2002. Molecular analysis of oncogenes, ras family genes (N-ras, K-ras, H-ras), myc family genes (c-myc, N-myc) and mdm2 in natural killer cell neoplasms. Jpn. J. Cancer Res. 93: 1270-1277.
6. Li, F., et al. 2005. Myc stimulates nuclearly encoded mitochondrial genes and mitochondrial biogenesis. Mol. Cell. Biol. 25: 6225-6234.
7. Tsuneoka, M., et al. 2005. A novel Myc-target gene, mimitin, that is involved in cell proliferation of esophageal squamous cell carcinoma. J. Biol. Chem. 280: 19977-19985.

CHROMOSOMAL LOCATION

Genetic locus: Ndufaf2 (mouse) mapping to 13 D2.1.

PRODUCT

Mimitin 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 Mimitin shRNA Plasmid (m): sc-61045-SH and Mimitin shRNA (m) Lentiviral Particles: sc-61045-V as alternate gene silencing products.

For independent verification of Mimitin (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-61045A, sc-61045B and sc-61045C.

PROTOCOLS

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

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

Mimitin siRNA (m) is recommended for the inhibition of Mimitin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Mimitin gene expression knockdown using RT-PCR Primer: Mimitin (m)-PR: sc-61045-PR (20 µl, 499 bp). 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.