SANTA CRUZ BIOTECHNOLOGY, INC.

MDMX siRNA (h): sc-37448

BACKGROUND

The MDM2 protein is the primary regulator of p53 protein stability. MDMX is an MDM2-related protein that inhibits MDM2-mediated degradation of p53 via distinct associations with MDM2. The gene that encodes MDMX (also designated MDM4) is a target for amplification in malignant gliomas. ARF interacts with MDMX to sequester MDMX within the nucleolus. This sequestration of MDMX by ARF results in an increase in p53 transactivation. In addition, expression of MDMX can reverse MDM2-targeted degradation of p53 while maintaining suppression of p53 transactivation. Like MDM2, MDMX also binds p73 and stabilizes the level of p73. Therefore, in striking contrast to p53, the half-life of p73 is increased by binding to MDM2.

REFERENCES

1. Riemenschneider, M.J., et al. 1999. Amplification and overexpression of the MDM4 (MDMX) gene from 1q32 in a subset of malignant gliomas without TP53 mutation or MDM2 amplification. Cancer Res. 59: 6091-6096.
2. Ongkeko, W.M., et al. 1999. MDM2 and MDMX bind and stabilize the p53-related protein p73. Curr. Biol. 9: 829-832.
3. Jackson, M.W., et al. 2000. MDMX protects p53 from MDM2-mediated degradation. Mol. Cell. Biol. 20: 1001-1007.
4. Jackson, M.W., et al. 2001. MDMX binding to ARF affects MDM2 protein stability and p53 transactivation. J. Biol. Chem. 276: 25336-25341.
5. Wang, X., et al. 2001. MDM2 and MDMX can interact differently with ARF and members of the p53 family. FEBS Lett. 490: 202-208.
6. Uldrijan, S., et al. 2007. An essential function of the extreme C-terminus of MDM2 can be provided by MDMX. EMBO J. 26: 102-112.

CHROMOSOMAL LOCATION

Genetic locus: MDM4 (human) mapping to 1q32.1.

PRODUCT

MDMX 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 MDMX shRNA Plasmid (h): sc-37448-SH and MDMX shRNA (h) Lentiviral Particles: sc-37448-V as alternate gene silencing products.

For independent verification of MDMX (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-37448A, sc-37448B and sc-37448C.

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

MDMX siRNA (h) is recommended for the inhibition of MDMX 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

MDMX (G-10): sc-74467 is recommended as a control antibody for monitoring of MDMX 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 MDMX gene expression knockdown using RT-PCR Primer: MDMX (h)-PR: sc-37448-PR (20 µl, 530 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Huang, Y., et al. 2011. Phospho-ΔNp63α/miR-885-3p axis in tumor cell life and cell death upon cisplatin exposure. Cell Cycle 10: 3938-3947.
2. Roh, J.L., et al. 2014. XI-011 enhances cisplatin-induced apoptosis by functional restoration of p53 in head and neck cancer. Apoptosis 19: 1594-1602.
3. Liu, T., et al. 2019. Mutual regulation of MDM4 and TOP2A in cancer cell proliferation. Mol. Oncol. 13: 1047-1058.

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.