SANTA CRUZ BIOTECHNOLOGY, INC.

MDM2 siRNA (h): sc-29394



BACKGROUND

p53 is the most commonly mutated gene in human cancer identified to date. Expression of p53 leads to inhibition of cell growth by preventing progression of cells from G_1 to S phase of the cell cycle. Most importantly, p53 functions to cause arrest of cells in the G_1 phase of the cell cycle following any exposure of cells to DNA-damaging agents. The MDM2 (murine double minute-2) protein was initially identified as an oncogene in a murine transformation system. MDM2 functions to bind p53 and block p53-mediated transactivation of cotransfected reporter constructs. The MDM2 gene is amplified in a high percentage of human sarcomas that retain wildtype p53 and tumor cells that overexpress MDM2 can tolerate high levels of p53 expression. These findings argue that MDM2 overexpression represents at least one mechanism by which p53 function can be abrogated during tumorigenesis.

CHROMOSOMAL LOCATION

Genetic locus: MDM2 (human) mapping to 12q15.

PRODUCT

MDM2 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 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MDM2 shRNA Plasmid (h): sc-29394-SH and MDM2 shRNA (h) Lentiviral Particles: sc-29394-V as alternate gene silencing 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 μ l of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNAse-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MDM2 siRNA (h) is recommended for the inhibition of MDM2 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 μ M in 66 μ 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.

RESEARCH USE

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

GENE EXPRESSION MONITORING

MDM2 (SMP14): sc-965 is recommended as a control antibody for monitoring of MDM2 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 MDM2 gene expression knockdown using RT-PCR Primer: MDM2 (h)-PR: sc-29394-PR (20 μ l, 476 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



MDM2 sinve (I), $s_{0,23,34}$, we stell that any site in MDM2 expression in non-transfected control (**A**) and MDM2 siRNA transfected (**B**) Jurkat cells. Blot probed with MDM2 (D-12): sc-5304. α -actinin (H-2): sc-1829 used as specificity and loading control.

SELECT PRODUCT CITATIONS

- Mukhopadhyay, I., et al. 2006. Molecular mechanism of adaphostin-mediated G₁ arrest in prostate cancer (PC-3) cells: signaling events mediated by hepatocyte growth factor receptor, c-Met, and p38 MAPK pathways. J. Biol. Chem. 281: 37330-37344.
- 2. Bae, S., et al. 2012. TRIAD1 is negatively regulated by the MDM2 E3 ligase. Oncol. Rep. 28: 1924-1928.
- 3. 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.
- Ye, F., et al. 2015. A MDM2-dependent positive-feedback loop is involved in inhibition of miR-375 and miR-106b induced by *Helicobacter pylori* lipopolysaccharide. Int. J. Cancer 136: 2120-2131.
- 5. Yang, P., et al. 2016. Downregulation of cyclin D1 sensitizes cancer cells to MDM2 antagonist Nutlin-3. Oncotarget 7: 32652-32663.
- Liu, L., et al. 2019. CP-31398 attenuates endometrial cancer cell invasion, metastasis and resistance to apoptosis by downregulating MDM2 expression. Int. J. Oncol. 54: 942-954.

PROTOCOLS

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