SANTA CRUZ BIOTECHNOLOGY, INC.

MDA-7 siRNA (m): sc-37447

BACKGROUND

MDA-7 (melanoma differentiation associated protein-7), also designated IL-24, was initially identified in cultured human melanoma cells following treatment with interferon-β and mezerin, a treatment that causes the cells to lose proliferative capacity and terminally differentiate. MDA-7 was shown to have antiproliferative properties in human melanoma cells and to reduce cell growth in tumors of diverse origin. The level of MDA-7 expression is inversely correlated with human melanoma progression, with the highest levels found in normal, proliferating melanocytes and the lowest levels found in metastatic melanoma. Overexpression of MDA-7 in human breast cancer cells has been shown to induce apoptosis and upregulate Bax expression in a p53-independent manner. However, MDA-7 does not elicit growth inhibition and apoptosis in normal, non-tumor cells.

REFERENCES

1. Fisher, P.B., et al. 1985. Effects of combined treatment with interferon and mezerein on melanogenesis and growth in human melanoma cells. J. Interferon Res. 5: 11-22.
2. Jiang, H., et al. 1995. Subtraction hybridization identifies a novel melanoma differentiation associated gene, MDA-7, modulated during human melanoma differentiation, growth and progression. Oncogene 11: 2477-2486.
3. Jiang, H., et al. 1996. The melanoma differentiation associated gene MDA-7 suppresses cancer cell growth. Proc. Natl. Acad. Sci. USA 93: 9160-9165.
4. Su, Z.Z., et al. 1998. The cancer growth suppressor gene MDA-7 selectively induces apoptosis in human breast cancer cells and inhibits tumor growth in nude mice. Proc. Natl. Acad. Sci. USA 95: 14400-14405.
5. Mumm, J.B., et al. 2006. Soluble human MDA-7/IL-24: characterization of the molecular form(s) inhibiting tumor growth and stimulating monocytes. J. Interferon Cytokine Res. 26: 877-886.
6. Buzas, K., et al. 2006. Staphylococci induce the production of melanoma differentiation-associated protein-7/IL-24. Acta Microbiol. Immunol. Hung. 53: 431-440.
7. Gopalan, B., et al. 2007. MDA-7/IL-24 suppresses human ovarian carcinoma growth *in vitro* and *in vivo*. Mol. Cancer 6: 11.
8. Yang, M., et al. 2007. Mechanisms responsible for antitumor activity of melanoma differentiation-associated gene -7/interleukin-24. Zhejiang Da Xue Xue Bao Yi Xue Ban 36: 98-102.
9. Inoue, S., et al. 2007. MDA-7 In combination with bevacizumab treatment produces a synergistic and complete inhibitory effect on lung tumor xenograft. Mol. Ther. 15: 287-294.

CHROMOSOMAL LOCATION

Genetic locus: Il24 (mouse) mapping to 1 E4.

PROTOCOLS

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

PRODUCT

MDA-7 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 MDA-7 shRNA Plasmid (m): sc-37447-SH and MDA-7 shRNA (m) Lentiviral Particles: sc-37447-V as alternate gene silencing products.

For independent verification of MDA-7 (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-37447A, sc-37447B and sc-37447C.

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

MDA-7 siRNA (m) is recommended for the inhibition of MDA-7 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 MDA-7 gene expression knockdown using RT-PCR Primer: MDA-7 (m)-PR: sc-37447-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.