SANTA CRUZ BIOTECHNOLOGY, INC.

MIA2 siRNA (h): sc-92388

BACKGROUND

Tumorigenesis is a process that is mediated by a network of membrane, cytosolic and nuclear associated factors, which regulate proliferation and cell-matrix interaction through signaling cascades. The phenotype of malignant melanomas *in vivo* depends on the global expression of stimulatory or inhibitory factors generated in both tumors cells and their environment. One such factor includes MIA2 (melanoma inhibitory activity 2), which is a 541 amino acid secreted protein that is highly expressed in hepatocytes and is considered a marker of hepatic fibrosis. Regulated by HNF-1 (hepatic nuclear factor 1), MIA2 is an inhibitor of hepatocellular carcinoma (HCC) growth and invasion, thereby acting as a tumour suppressor. MIA2 is a member of the MIA/OTOR family and contains one SH3 domain, which binds to proline-rich regions of a wide range of regulators. MIA2 exists as two alternatively spliced variants and is encoded by a gene located on human chromsome 14.

REFERENCES

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2. Bosserhoff, A.K., et al. 1997. Mouse CD-RAP/MIA gene: structure, chromosomal localization, and expression in cartilage and chondrosarcoma. Dev. Dyn. 208: 516-525.
3. Perez, R.P., et al. 2000. Expression of melanoma inhibitory activity in melanoma and nonmelanoma tissue specimens. Hum. Pathol. 31: 1381-1388.
4. Lougheed, J.C., et al. 2001. Structure of melanoma inhibitory activity protein, a member of a recently identified family of secreted proteins. Proc. Natl. Acad. Sci. USA 98: 5515-5520.
5. Stoll, R., et al. 2001. The extracellular human melanoma inhibitory activity (MIA) protein adopts an SH3 domain-like fold. EMBO J. 20: 340-349.
6. Bosserhoff, A.K., et al. 2003. Specific expression and regulation of the new melanoma inhibitory activity-related gene MIA2 in hepatocytes. J. Biol. Chem. 278: 15225-15231.
7. Bosserhoff, A.K., et al. 2004. Characterization and expression pattern of the novel MIA homolog TANGO. Gene Expr. Patterns 4: 473-479.
8. Hellerbrand, C., et al. 2005. *In situ* expression patterns of melanoma inhibitory activity 2 in healthy and diseased livers. Liver Int. 25: 357-366.
9. Hellerbrand, C., et al. 2008. The novel gene MIA2 acts as a tumour suppressor in hepatocellular carcinoma. Gut 57: 243-251.

CHROMOSOMAL LOCATION

Genetic locus: MIA2 (human) mapping to 14q21.1.

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.

PRODUCT

MIA2 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 MIA2 shRNA Plasmid (h): sc-92388-SH and MIA2 shRNA (h) Lentiviral Particles: sc-92388-V as alternate gene silencing products.

For independent verification of MIA2 (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-92388A, sc-92388B and sc-92388C.

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

MIA2 siRNA (h) is recommended for the inhibition of MIA2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MIA2 gene expression knockdown using RT-PCR Primer: MIA2 (h)-PR: sc-92388-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.