SANTA CRUZ BIOTECHNOLOGY, INC.

MIA3 siRNA (h): sc-78818

BACKGROUND

MIA3 (melanoma inhibitory activity family, member 3), also known as ARNT or TANGO, is a 1,907 amino acid single-pass type I membrane protein that localizes to the endoplasmic reticulum (ER) and contains one SH3 domain. Expressed in a wide variety of tissues with the exception of bone marrow and peripheral blood mononuclear cells, MIA3 is required for COL7A1 secretion and cargo loading at ER exit sites and may also regulate the release of other proteins from the ER. Multiple isoforms of MIA3 exist due to alternative splicing events. The gene encoding MIA3 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Nagase, T., et al. 1996. Prediction of the coding sequences of unidentified human genes. VI. The coding sequences of 80 new genes (KIAA0201-KIAA0280) deduced by analysis of cDNA clones from cell line KG-1 and brain. DNA Res. 3: 321-329, 341-354.
2. Bosserhoff, A.K., et al. 2004. Characterization and expression pattern of the novel MIA homolog TANGO. Gene Expr. Patterns 4: 473-479.
3. Arndt, S. and Bosserhoff, A.K. 2006. TANGO is a tumor suppressor of malignant melanoma. Int. J. Cancer 119: 2812-2820.
4. Arndt, S., et al. 2007. Interactions of TANGO and leukocyte integrin CD11c/CD18 regulate the migration of human monocytes. J. Leukoc. Biol. 82: 1466-1472.
5. Arndt, S. and Bosserhoff, A.K. 2007. Reduced expression of TANGO in colon and hepatocellular carcinomas. Oncol. Rep. 18: 885-891.

CHROMOSOMAL LOCATION

Genetic locus: MIA3 (human) mapping to 1q41.

PRODUCT

MIA3 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 MIA3 shRNA Plasmid (h): sc-78818-SH and MIA3 shRNA (h) Lentiviral Particles: sc-78818-V as alternate gene silencing products.

For independent verification of MIA3 (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-78818A, sc-78818B and sc-78818C.

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

MIA3 siRNA (h) is recommended for the inhibition of MIA3 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

MIA3 (C-5): sc-393916 is recommended as a control antibody for monitoring of MIA3 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 MIA3 gene expression knockdown using RT-PCR Primer: MIA3 (h)-PR: sc-78818-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cao, Q., et al. 2022. A role for Collagen VII in matrix protein secretion. Matrix Biol. E-published.

RESEARCH USE

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