

MA1 siRNA (h): sc-62571

BACKGROUND

Paraneoplastic neurological disorders (PNDs) are rare syndromes that are caused by, or associated with, an underlying neoplasm. The most common neoplasm among young male patients is testicular cancer, but the leading cause among other patients is lung cancer. Most PNDs are caused by an immune response against onconeural antigens, causing progressive neurological damage. The paraneoplastic antigen MA family contains three known members: MA1, MA2 and MA3. MA1, also designated neuron- and testis-specific protein 1, is a nucleolar protein in normal cells but localizes to the cytoplasm of tumor cells. MA2, also designated onconeural antigen MA2, is a nucleolar protein expressed in brain and testis. MA3 is highly expressed in brain and testis and is expressed at low levels in heart, trachea and kidney.

REFERENCES

1. Dalmau, J., Gultekin, S.H., Voltz, R., Hoard, R., DesChamps, T., Balmaceda, C., Batchelor, T., Gerstner, E., Eichen, J., Frennier, J., Posner, J.B. and Rosenfeld, M.R. 1999. Ma1, a novel neuron- and testis-specific protein, is recognized by the serum of patients with paraneoplastic neurological disorders. *Brain* 122: 27-39.
2. Rosenfeld, M.R., Eichen, J.G., Wade, D.F., Posner, J.B. and Dalmau, J. 2001. Molecular and clinical diversity in paraneoplastic immunity to Ma proteins. *Ann. Neurol.* 50: 339-348.
3. Pellkofer, H., Schubart, A.S., Höftberger, R., Schütze, N., Pagany, M., Schüller, M., Lassmann, H., Hohlfeld, R., Voltz, R. and Linington, C. 2004. Modelling paraneoplastic CNS disease: T cells specific for the onconeural antigen PNMA1 mediate autoimmune encephalomyelitis in the rat. *Brain* 127: 1822-1830.
4. Schüller, M., Jenne, D. and Voltz, R. 2005. The human PNMA family: novel neuronal proteins implicated in paraneoplastic neurological disease. *J. Neuroimmunol.* 169: 172-176.

CHROMOSOMAL LOCATION

Genetic locus: PNMA1 (human) mapping to 14q24.3.

PRODUCT

MA1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MA1 shRNA Plasmid (h): sc-62571-SH and MA1 shRNA (h) Lentiviral Particles: sc-62571-V as alternate gene silencing products.

For independent verification of MA1 (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-62571A, sc-62571B and sc-62571C.

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 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

MA1 siRNA (h) is recommended for the inhibition of MA1 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.

GENE EXPRESSION MONITORING

MA1 (G-10): sc-166915 is recommended as a control antibody for monitoring of MA1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 MA1 gene expression knockdown using RT-PCR Primer: MA1 (h)-PR: sc-62571-PR (20 μ l). 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.