

MA3 siRNA (h): sc-91020

BACKGROUND

MA3, also known as PNMA3 (paraneoplastic antigen MA3), is a 463 amino acid nuclear protein that contains one CCHC-type zinc finger and belongs to the paraneoplastic antigen MA (PNMA) family. Highly expressed in testis and brain, MA3 is found at lower levels in kidney, trachea and heart. MA3 exists as two alternatively spliced isoforms, and antibodies against MA3 are found in serum of patients with paraneoplastic neurological disorders. The gene encoding MA3 maps to human chromosome X, which consists of about 153 million base pairs and nearly 1,000 genes. Color blindness, hemophilia and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently, as males carry a single X chromosome.

REFERENCES

1. Rosenfeld, M.R., et al. 2001. Molecular and clinical diversity in paraneoplastic immunity to MA proteins. *Ann. Neurol.* 50: 339-348.
2. Bernardino-Sgherri, J., et al. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. *Cytogenet. Genome Res.* 99: 85-91.
3. Deeb, S.S. 2005. The molecular basis of variation in human color vision. *Clin. Genet.* 67: 369-377.
4. Schüller, M., et al. 2005. The human PNMA family: novel neuronal proteins implicated in paraneoplastic neurological disease. *J. Neuroimmunol.* 169: 172-176.
5. Wills, N.M., et al. 2006. A functional -1 ribosomal frameshift signal in the human paraneoplastic MA3 gene. *J. Biol. Chem.* 281: 7082-7088.
6. Maggio, M.C., et al. 2007. Polycystic ovary and gonadoblastoma in Turner's syndrome. *Minerva Pediatr.* 59: 397-401.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 300675. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Helderma-van den Enden, A.T., de Jong, R., den Dunnen, J.T., Houwing-Duistermaat, J.J., Kneppers, A.L., Ginjaar, H.B., Breuning, M.H. and Bakker, E. 2009. Recurrence risk due to germ line mosaicism: Duchenne and Becker muscular dystrophy. *Clin. Genet.* 75: 465-472.

CHROMOSOMAL LOCATION

Genetic locus: PNMA3 (human) mapping to Xq28.

PRODUCT

MA3 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 MA3 shRNA Plasmid (h): sc-91020-SH and MA3 shRNA (h) Lentiviral Particles: sc-91020-V as alternate gene silencing products.

For independent verification of MA3 (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-91020A, sc-91020B and sc-91020C.

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

MA3 siRNA (h) is recommended for the inhibition of MA3 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

MA3 (A-1): sc-515510 is recommended as a control antibody for monitoring of MA3 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 MA3 gene expression knockdown using RT-PCR Primer: MA3 (h)-PR: sc-91020-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.

PROTOCOLS

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