SANTA CRUZ BIOTECHNOLOGY, INC.

MSY2 siRNA (m): sc-38631

BACKGROUND

MSY2 and YB-2 (MSY3,4) belong to the Y-box family of multifunctional proteins that regulate both transcription and translation. Y-box proteins interact with a wide variety of nucleic acid structures to act as transcription factors and mRNA masking proteins. The modular structure of Y-box proteins includes a highly conserved N-terminal cold-shock domain (CSD, equivalent to the bacterial cold-shock proteins) and four basic C-terminal domains containing arginine clusters and aromatic residues. MSY2 is expressed in testis and ovary where it may repress translation of parental mRNA. YB-2 (MSY3,4 in mouse) is also known as DNA binding protein A and is highly expressed in the testis, heart and muscle. MSY2 and YB-2 bind to the consensus sequence 5'-UCCAUCA-3' contained in the Y-box element.

REFERENCES

1. Tekur, S., et al. 1999. Contrin, the human homolog of a germ-cell Y-box binding protein: cloning, expression, and chromosomal localization. J. Androl. 20: 135-144.
2. Okamoto, T., et al. 2000. Direct interaction of p53 with the Y-box binding protein, YB-1: a mechanism for regulation of human gene expression. Oncogene 54: 6194-6202.
3. Levenson, V.V., et al. 2000. Pleiotropic resistance to DNA-interactive drugs is associated with increased expression of genes involved in DNA replication, repair, and stress response. Cancer Res. 18: 5027-5030.
4. Davies, H.G., et al. 2000. A sequence-specific RNA binding complex expressed in murine germ cells contains MSY2 and MSY4. Dev. Biol. 221: 87-100.
5. Mastrangelo, M.A., et al. 2000. Developmental expression of Y-box protein 1 mRNA and alternatively spliced Y-box protein 3 mRNAs in spermatogenic cells in mice. Mol. Hum. Reprod. 6: 779-788.
6. Diamond, P., et al. 2001. Cold shock domain factors activate the granulocyte-macrophage colony-stimulating factor promoter in stimulated Jurkat T cells. J. Biol. Chem. 11: 7943-7951.
7. Chansky, H.A., et al. 2001. Oncogenic TLS/ERG and EWS/Fli-1 fusion proteins inhibit RNA splicing mediated by YB-1 protein. Cancer Res. 9: 3586-3590.

CHROMOSOMAL LOCATION

Genetic locus: Ybx2 (mouse) mapping to 11 B3.

PRODUCT

MSY2 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 MSY2 shRNA Plasmid (m): sc-38631-SH and MSY2 shRNA (m) Lentiviral Particles: sc-38631-V as alternate gene silencing products.

For independent verification of MSY2 (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-38631A, sc-38631B and sc-38631C.

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

MSY2 siRNA (m) is recommended for the inhibition of MSY2 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.

GENE EXPRESSION MONITORING

MSY2 (A-12): sc-393840 is recommended as a control antibody for monitoring of MSY2 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 MSY2 gene expression knockdown using RT-PCR Primer: MSY2 (m)-PR: sc-38631-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.

PROTOCOLS

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