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SANTA CRUZ BIOTECHNOLOGY, INC.

MOCS1 siRNA (m): sc-149495

BACKGROUND

Molybdenum is an essential trace element found in most organisms that functions as a cofactor for several enzymes. Molybdenum catalyzes important transformations in carbon, nitrogen and sulfur metabolism. The Molybdenum cofactor biosynthetic pathway is evolutionarily conserved between organisms. MOCS1 (molybdenum cofactor synthesis 1), also known as molybdenum cofactor synthesis-step 1 protein A-B, cell migration-inducing gene 11 protein, MOCOD or MIG11, is a 636 amino acid protein that exists as eight widely expressed isoforms, two of which (designated MOCS1A and MOCS1B) form a heterooligomer. MOCS1 plays a role in molybdenum cofactor and molybdopterin biosynthesis, and mutations in the MOCS1 gene are linked to an autosomal recessive disease known as molybdenum cofactor deficiency type A (MOCOD type A), which is characterized by early childhood death, neurological damage and neonatal seizures.

REFERENCES

1. van Gennip, A.H., et al. 1994. Effect of allopurinol on the xanthinuria in a patient with molybdenum cofactor deficiency. Adv. Exp. Med. Biol. 370: 375-378.
2. Shalata, A., et al. 1998. Localization of a gene for molybdenum cofactor deficiency, on the short arm of chromosome 6, by homozygosity mapping. Am. J. Hum. Genet. 63: 148-154.
3. Reiss, J., et al. 1998. Genomic structure and mutational spectrum of the bicistronic MOCS1 gene defective in molybdenum cofactor deficiency type A. Hum. Genet. 103: 639-644.
4. Reiss, J., et al 1998. Mutations in a polycistronic nuclear gene associated with molybdenum cofactor deficiency. Nat. Genet. 20: 51-53.
5. Reiss, J., et al. 1999. Human molybdopterin synthase gene: genomic structure and mutations in molybdenum cofactor deficiency type B. Am. J. Hum. Genet. 64: 706-711.
6. Reiss, J., et al. 1999. Molybdenum cofactor deficiency: first prenatal genetic analysis. Prenat. Diagn. 19: 386-388.

CHROMOSOMAL LOCATION

Genetic locus: Mocs1 (mouse) mapping to 17 C.

PRODUCT

MOCS1 siRNA (m) is a pool of 2 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 MOCS1 shRNA Plasmid (m): sc-149495-SH and MOCS1 shRNA (m) Lentiviral Particles: sc-149495-V as alternate gene silencing products.

For independent verification of MOCS1 (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-149495A and sc-149495B.

RESEARCH USE

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

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

MOCS1 siRNA (m) is recommended for the inhibition of MOCS1 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

MOCS1 (G-6): sc-398094 is recommended as a control antibody for monitoring of MOCS1 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 MOCS1 gene expression knockdown using RT-PCR Primer: MOCS1 (m)-PR: sc-149495-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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