SANTA CRUZ BIOTECHNOLOGY, INC.

CMAS siRNA (m): sc-142409

BACKGROUND

CMAS (cytidine monophosphate N-acetylneuraminic acid synthetase), also known as CMP-NeuNAc synthetase or CMP-sialic acid sythetase, is a ubiquitously expressed 434 amino acid protein involved in sialic acid metabolism. Localizing to the nucleus, the evolutionarily conserved enzyme CMAS functions as a homotetramer and catalyzes the production of cytidine 5'-monophosphate N-acetylneuraminic acid (CMP-NeuNAc) from N-acetylneuraminic acid and CTP. The generation of CMP-NeuNAc is an important reaction because CMP-NeuNAc is an essential donor substrate used by sialyltransferases for the addition of sialic acid to hydroxyl groups at the terminal end of glycoproteins, polysaccharides and glycolipids. Proteins with this post-translational modification play an important role in the development, structure and function of animal tissues.

REFERENCES

1. Münster, A.K., et al. 1998. Mammalian cytidine 5'-monophosphate N-acetylneuraminic acid synthetase: a nuclear protein with evolutionarily conserved structural motifs. Proc. Natl. Acad. Sci. USA 95: 9140-9145.
2. Karwaski, M.F., et al. 2002. High-level expression of recombinant Neisseria CMP-sialic acid synthetase in *Escherichia coli*. Protein Expr. Purif. 25: 237-240.
3. Munster, A.K., et al. 2002. Nuclear localization signal of murine CMP-Neu5Ac synthetase includes residues required for both nuclear targeting and enzymatic activity. J. Biol. Chem. 277: 19688-19696.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603316. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Viswanathan, K., et al. 2006. Expression of a functional *Drosophila melanogaster* CMP-sialic acid synthetase. Differential localization of the *Drosophila* and human enzymes. J. Biol. Chem. 281: 15929-15940.

CHROMOSOMAL LOCATION

Genetic locus: Cmas (mouse) mapping to 6 G3.

PRODUCT

CMAS 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 CMAS shRNA Plasmid (m): sc-142409-SH and CMAS shRNA (m) Lentiviral Particles: sc-142409-V as alternate gene silencing products.

For independent verification of CMAS (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-142409A, sc-142409B and sc-142409C.

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

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

CMAS (E-8): sc-398296 is recommended as a control antibody for monitoring of CMAS 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 CMAS gene expression knockdown using RT-PCR Primer: CMAS (m)-PR: sc-142409-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.