SANTA CRUZ BIOTECHNOLOGY, INC.

CMAS (E-8): sc-398296

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: CMAS (human) mapping to 12p12.1; Cmas (mouse) mapping to 6 G3.

SOURCE

CMAS (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 150-163 within an internal region of CMAS of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CMAS (E-8) is available conjugated to agarose (sc-398296 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398296 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398296 PE), fluorescein (sc-398296 FITC), Alexa Fluor® 488 (sc-398296 AF488), Alexa Fluor® 546 (sc-398296 AF546), Alexa Fluor® 594 (sc-398296 AF594) or Alexa Fluor® 647 (sc-398296 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398296 AF680) or Alexa Fluor® 790 (sc-398296 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398296 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CMAS (E-8) is recommended for detection of CMAS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CMAS (E-8) is also recommended for detection of CMAS in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CMAS siRNA (h): sc-95844, CMAS siRNA (m): sc-142409, CMAS siRNA (r): sc-270223, CMAS shRNA Plasmid (h): sc-95844-SH, CMAS shRNA Plasmid (m): sc-142409-SH, CMAS shRNA Plasmid (r): sc-270223-SH, CMAS shRNA (h) Lentiviral Particles: sc-95844-V, CMAS shRNA (m) Lentiviral Particles: sc-142409-V and CMAS shRNA (r) Lentiviral Particles: sc-270223-V.

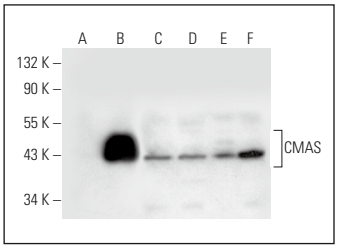
Molecular Weight of CMAS: 48 kDa.

Positive Controls: CMAS (m): 293T Lysate: sc-119320, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

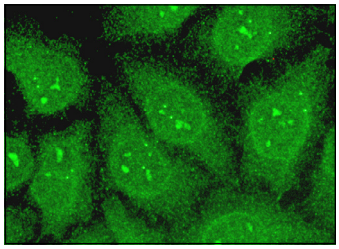
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CMAS (E-8): sc-398296. Western blot analysis of CMAS expression in non-transfected 293T: sc-117752 (**A**), mouse CMAS transfected 293T: sc-119320 (**B**), HeLa (**C**) and U-251-MG (**D**) whole cell lysates and K-562 (**E**) and HeLa (**F**) nuclear extracts.



CMAS (E-8): sc-398296. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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