

# CMAH (E-7): sc-365023



The Power to Question

## BACKGROUND

The sialic acids are a family of acidic sugars typically found in the outer portion of the cell surface and in secreted glycoconjugates of all vertebrates. Cell membrane sialic acid is involved in cell-cell and cell-pathogen interactions and in binding of cells to the extracellular matrix. The two most common forms of sialic acid found in mammalian cells are N-acetylneuraminic acid (Neu5Ac) and its hydroxylated derivative, N-glycolylneuraminic acid (Neu5Gc). CMAH (cytidine monophospho-N-acetylneuraminic acid hydroxylase), also known as CMP-Neu5Ac hydroxylase or CMP-N-acetylneuraminic acid monooxygenase, is a 577 amino acid cytoplasmic protein that is expressed in all tissues, except in brain. Belonging to the CMP-Neu5Ac hydroxylase family, CMAH catalyzes the conversion of CMP-Neu5Ac into its hydroxylated derivative CMP-Neu5Gc, a sialic acid abundantly expressed at the surface of many cells. CMAH exists as two isoforms due to alternative splicing events. Isoform 2 is expressed in the endoplasmic reticulum.

## REFERENCES

1. Kawano, T., et al. 1995. Molecular cloning of cytidine monophospho-N-acetylneuraminic acid hydroxylase. Regulation of species- and tissue-specific expression of N-glycolylneuraminic acid. *J. Biol. Chem.* 270: 16458-16463.
2. Muchmore, E.A., et al. 1998. A structural difference between the cell surfaces of humans and the great apes. *Am. J. Phys. Anthropol.* 107: 187-198.
3. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 603209. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Chou, H.H., et al. 2002. Inactivation of CMP-N-acetylneuraminic acid hydroxylase occurred prior to brain expansion during human evolution. *Proc. Natl. Acad. Sci. USA* 99: 11736-11741.

## CHROMOSOMAL LOCATION

Genetic locus: CMAHP (human) mapping to 6p22.3; Cmah (mouse) mapping to 13 A3.1.

## SOURCE

CMAH (E-7) is a mouse monoclonal antibody raised against amino acids 3-242 mapping near the N-terminus of CMAH of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CMAH (E-7) is available conjugated to agarose (sc-365023 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365023 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365023 PE), fluorescein (sc-365023 FITC), Alexa Fluor® 488 (sc-365023 AF488), Alexa Fluor® 546 (sc-365023 AF546), Alexa Fluor® 594 (sc-365023 AF594) or Alexa Fluor® 647 (sc-365023 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365023 AF680) or Alexa Fluor® 790 (sc-365023 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CMAH (E-7) is recommended for detection of CMAH 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).

Suitable for use as control antibody for CMAH siRNA (m): sc-142408, CMAH shRNA Plasmid (m): sc-142408-SH and CMAH shRNA (m) Lentiviral Particles: sc-142408-V.

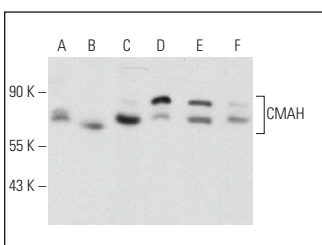
Molecular Weight of CMAH: 66 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, SP2/0 whole cell lysate: sc-364795 or Raji whole cell lysate: sc-364236.

## 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



CMAH (E-7): sc-365023. Western blot analysis of CMAH expression in Raji (A), Jurkat (B), Daudi (C), C2C12 (D), SP2/0 (E) and AT-3 (F) whole cell lysates.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.