SANTA CRUZ BIOTECHNOLOGY, INC.

CMAH (M-240): sc-98536

SANTA CRUZ BIOTECHNOLOGY

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-acetylneuraminate 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.
5. Bighignoli, B., et al. 2007. Cytidine monophospho-N-acetylneuraminic acid hydroxylase (CMAH) mutations associated with the domestic cat AB blood group. BMC Genet. 8: 27.

CHROMOSOMAL LOCATION

Genetic locus: Cmah (mouse) mapping to 13 A3.1.

SOURCE

CMAH (M-240) is a rabbit polyclonal antibody raised against amino acids 3-242 mapping near the N-terminus of CMAH of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

CMAH (M-240) is recommended for detection of CMAH of mouse and rat origin by Western Blotting (starting dilution 1:200, 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.

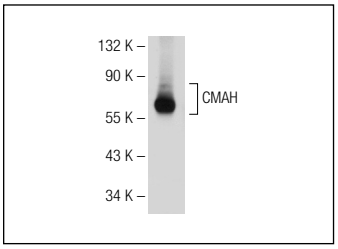
Molecular Weight of CMAH: 66 kDa.

Positive Controls: mouse kidney extract: sc-2255.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CMAH (M-240): sc-98536. Western blot analysis of CMAH expression in mouse kidney tissue extract.

RESEARCH USE

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

PROTOCOLS

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