

CMAH (P-12): sc-131130

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 hydroxylase, 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 (P-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-131130 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CMAH (P-12) 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).

CMAH (P-12) is also recommended for detection of CMAH in additional species, including canine.

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.

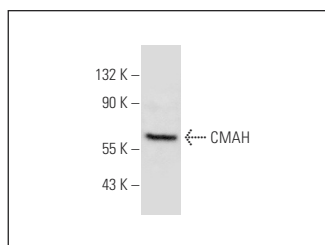
Molecular Weight of CMAH: 66 kDa.

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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

DATA



CMAH (P-12): sc-131130. Western blot analysis of CMAH expression in mouse kidney tissue extract.

RESEARCH USE

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

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Try **CMAH (E-7): sc-365023**, our highly recommended monoclonal alternative to CMAH (P-12).