Putative Cytidine Monophosphate-N-Acetylneuraminic Acid Hydroxylase-Like Protein (CMAHP) Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	Putative cytidine monophosphate-N-acetylneuraminic acid hydroxylase-like protein (CMAHP), Recombinant Protein
Full Product Name	Recombinant Human Putative cytidine monophosphate-N-acetylneuraminic acid hydroxylase-like protein (CMAHP)
Product Gene Name	CMAHP recombinant protein
Product Synonym Gene Name	CMAHP
Sequence	MDENNGLLLL ELNPPNPWDL QPRSPEELAF GEVQITYLTH ACMDLKLGDK RMVFDPWLIG PAFARGWWLL HEPPSDWLER LCQADLIYIS HLHSDHLSYP TLKKLAGRRP DIPIYVGNTE RPVFWNLNQS GVQLTNINVV PFGIWQQVDK NLRFMILMDG VHPEMDTCII VEYKGHKILN IVDCTRPNGG RLPMKVALMM SDFAGGASGF PMTFSGGKFT EEWKAQFIKT ERKKLLNYKA RLVKNLQPRI YCPFAGYFVE SHPSDKYIKE TNTKNDPNEL NNLIKKNSDV ITWTPRPGAT LDLGRMLKDR TDSKGIIEPP EGTKIYKDSW DFEPYLEILN AALGDEIFLH SSWIKEYFTW AGFKDYNLVV RMIETDEDFN PFPGGYDYLV DFLDLSFPKE RPQREHPYEE IHSRVDVIRH VVKNGLLWDE LYIGFQTRLQ RDPDIYHHLF WNHFQIKLPL TPPNWKSFLM CCEQNGPVIL QFSTERTNEP NR NKFSVE NKA
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	56,564 Da
Sequence Positions	1-501aa; Full Length
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
OMIM	603209
3D Structure	ModBase 3D Structure for Q9Y471
Species	Human
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.

Related Product Information for CMAHP recombinant protein	Sialic acids are terminal components of the carbohydrate chains of glycoconjugates involved in ligand-receptor, cell-cell, and cell-pathogen interactions. 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). Studies of sialic acid distribution show that Neu5Gc is not detectable in normal human tissues although it was an abundant sialic acid in other mammals. Neu5Gc is, in actuality, immunogenic in humans. The absense of Neu5Gc in humans is due to a deletion within the human gene CMAH encoding cytidine monophosphate-N-acetylneuraminic acid hydroxylase, an enzyme responsible for Neu5Gc biosynthesis. Sequences encoding the mouse, pig, and chimpanzee hydroxylase enzymes were obtained by cDNA cloning and found to be highly homologous. However, the homologous human cDNA differs from these cDNAs by a 92-bp deletion in the 5 region. This deletion, corresponding to exon 6 of the mouse hydroxylase gene, causes a frameshift mutation and premature termination of the polypeptide chain in human. It seems unlikely that the truncated human hydroxylase mRNA encodes for an active enzyme explaining why Neu5Gc is undetectable in normal human tissues. Human genomic DNA also shows evidence of this deletion which does not occur in the genomes of African great apes. Nonetheless, the CMAH gene maps to 6p21.32 in humans and great apes indicating that mutation of the CMAH gene occurred following human divergence from chimpanzees and bonobos.
Other Notes	Small volumes of CMAHP recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for CMAHP purchase	MBS1329791 is a recombinant protein targeting CMAHP. Also known as Recombinant Human Putative cytidine monophosphate-N-acetylneuraminic acid hydroxylase-like protein (CMAHP). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CMAHP. It may not necessarily be applicable to this product.

NCBI GI #	816380040
NCBI GeneID	8418
NCBI Accession #	Q9Y471.4
UniProt Primary Accession #	Q9Y471
UniProt Secondary Accession #	O95250; Q5TD41; Q5TD42; Q5TD43; Q5TD44; Q68DC3; Q9UEE7; C1K3L2
UniProt Related Accession #	Q9Y471
NCBI Official Full Name	Inactive cytidine monophosphate-N-acetylneuraminic acid hydroxylase
NCBI Official Synonym Full Names	cytidine monophospho-N-acetylneuraminic acid hydroxylase, pseudogene
NCBI Official Symbol	CMAHP
NCBI Official Synonym Symbols	CMAH; CSAH
UniProt Protein Name	Inactive cytidine monophosphate-N-acetylneuraminic acid hydroxylase
UniProt Synonym Protein Names	Cytidine monophosphate-N-acetylneuraminic acid hydroxylase pseudogene
Protein Family	Inactive cytidine monophosphate-N-acetylneuraminic acid hydroxylase
UniProt Gene Name	CMAHP
UniProt Synonym Gene Names	CMAH; CMP-NeuAc hydroxylase-like protein

NCBI Summary for CMAHP	Sialic acids are terminal components of the carbohydrate chains of glycoconjugates involved in ligand-receptor, cell-cell, and cell-pathogen interactions. 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). Studies of sialic acid distribution show that Neu5Gc is not detectable in normal human tissues although it was an abundant sialic acid in other mammals. Neu5Gc is, in actuality, immunogenic in humans. The absense of Neu5Gc in humans is due to a deletion within the human gene CMAH encoding cytidine monophosphate-N-acetylneuraminic acid hydroxylase, an enzyme responsible for Neu5Gc biosynthesis. Sequences encoding the mouse, pig, and chimpanzee hydroxylase enzymes were obtained by cDNA cloning and found to be highly homologous. However, the homologous human cDNA differs from these cDNAs by a 92-bp deletion in the 5' region. This deletion, corresponding to exon 6 of the mouse hydroxylase gene, causes a frameshift mutation and premature termination of the polypeptide chain in human. It seems unlikely that the truncated human hydroxylase mRNA encodes for an active enzyme explaining why Neu5Gc is undetectable in normal human tissues. Human genomic DNA also shows evidence of this deletion which does not occur in the genomes of African great apes. Nonetheless, the CMAH gene maps to 6p21.32 in humans and great apes indicating that mutation of the CMAH gene occurred following human divergence from chimpanzees and bonobos. [provided by RefSeq, Jul 2008]
UniProt Comments for CMAHP	Sialic acids are components of carbohydrate chains of glycoconjugates and are involved in cell-cell recognition and cell-pathogen interactions. That protein has no CMP-N-acetylneuraminate monooxygenase activity and is not able to convert CMP-N-acetylneuraminic acid (CMP-Neu5Ac) into its hydroxylated derivative CMP-N-glycolylneuraminic acid (CMP-Neu5Gc), a sialic acid abundantly expressed at the surface of many cells in vertebrates (PubMed:9624188). However, it may play a role in Wnt signaling (PubMed:19890979).
Research Articles on CMAHP	**1.** GGTA1/CMAH knockout pig samples had increased relative amounts of high-mannose, incomplete, and xylosylated N-linked glycans
Precautions	All of MyBioSource's Products are for scientific laboratory research purposes and are not for diagnostic, therapeutics, prophylactic or in vivo use. Through your purchase, you expressly represent and warrant to MyBioSource that you will properly test and use any Products purchased from MyBioSource in accordance with industry standards. MyBioSource and its authorized distributors reserve the right to refuse to process any order where we reasonably believe that the intended use will fall outside of our acceptable guidelines.
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