Recombinant Mouse Mmachc Protein, Myc/DDK-tagged

Cat. No. Mmachc-4096M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Purified recombinant protein of mouse full-length methylmalonic aciduria cblC type, with homocystinuria (Mmachc), with C-terminal MYC/DDK tag, expressed in HEK293T cells.
Species	Mouse
Source	HEK293
Description	Cobalamin (vitamin B12) cytosolic chaperone that catalyzes the reductive decyanation of cyanocob(III)alamin (cyanocobalamin, CNCbl) to yield cob(II)alamin and cyanide, using FAD or FMN as cofactors and NADPH as cosubstrate. Cyanocobalamin constitutes the inactive form of vitamin B12 introduced from the diet, and is converted into the active cofactors methylcobalamin (MeCbl) involved in methionine biosynthesis, and 5'-deoxyadenosylcobalamin (AdoCbl) involved in the TCA cycle. Forms a complex with the lysosomal transporter ABCD4 and its chaperone LMBRD1, to transport cobalamin across the lysosomal membrane into the cytosol. The processing of cobalamin in the cytosol occurs in a multiprotein complex composed of at least MMACHC, MMADHC, MTRR (methionine synthase reductase) and MTR (methionine synthase) which may contribute to shuttle safely and efficiently cobalamin towards MTR in order to produce methionine. Also acts as a glutathione transferase by catalyzing the dealkylation of the alkylcob(III)alamins MeCbl and AdoCbl, using the thiolate of glutathione for nucleophilic displacement to generate cob(I)alamin and the corresponding glutathione thioether. The conversion of incoming MeCbl or AdoCbl into a common intermediate cob(I)alamin is necessary to meet the

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	cellular needs for both cofactors. Cysteine and homocysteine cannot substitute for glutathione in this reaction.
Molecular Mass	25.2 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 μg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Mmachc methylmalonic aciduria cblC type, with homocystinuria [Mus musculus (house mouse)]
Official Symbol	Mmachc
Synonyms	MMACHC; methylmalonic aciduria cblC type, with homocystinuria; methylmalonic aciduria and homocystinuria type C protein homolog; 1810037K07Rik; RP23-177C18.3
Gene ID	67096
mRNA Refseq	NM_025962

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Protein Refseq	NP_080238
UniProt ID	Q9CZD0

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