

CKMT1A Protein, Human, Recombinant (His)

General Information

Synonyms:	creatine kinase, mitochondrial 1A;CKMT;CKMT1A;CKMT1
Protein Construction:	Ala40-His417
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P12532-1
Molecular Weight:	44.60 kDa (predicted); 44.60 kDa (reducing conditions)

QC Testing

Biological Activity:	Kinase activity untested
Purity:	> 95% as determined by Bis-Tris PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Supplied as 0.22 µm filtered solution in 20mM Tris, 500mM NaCl (pH 8.5).

Preparation and Storage

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Kinases are highly recommended to be shipped at frozen temperature with blue ice or dry ice.

Protein Background

CKMT1A belongs to the ATP:guanido phosphotransferase family. It contains 1 phosphagen kinase C-terminal domain and 1 phosphagen kinase N-terminal domain. CKMT1A gene is one of two genes that encodes the ubiquitous mitochondrial creatine kinase (CKMT1). CKMT1 is responsible for the transfer of high energy phosphate from mitochondria to the cytosolic carrier, creatine. It belongs to the creatine kinase isoenzyme family. It exists as two isoenzymes, sarcomeric MtCK (CKMT2) and ubiquitous MtCK, encoded by separate genes. CKMT1 occurs in two different oligomeric forms: dimers and octamers, in contrast to the exclusively dimeric cytosolic creatine kinase isoenzymes. Ubiquitous mitochondrial creatine kinase has 80% homology with the coding exons of sarcomeric CKMT1.

Reference

Haas RC, et al. (1989) Isolation and characterization of the gene and cDNA encoding human mitochondrial creatine kinase. J Biol Chem. 264(5):2890-7.

Stachowiak O, et al. (1998) Oligomeric state and membrane binding behaviour of creatine kinase isoenzymes: implications for cellular function and mitochondrial structure. Mol Cell Biochem. 184(1-2):141-51.

Lipkaya TY. (2001) Mitochondrial creatine kinase: properties and function. Biochemistry Mosc. 66(10):1098-111.

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