

## Creatine kinase B/CKB Protein, Human, Recombinant (His)

### General Information

Synonyms:	HEL-S-29;CKBB;HEL-211;creatine kinase, brain;BCK;B-CK
Protein Construction:	A DNA sequence encoding the human CKB (P12277)(Pro2-Lys381) was fused with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P12277
Molecular Weight:	44.8 kDa (predicted); 45 kDa (reducing conditions)

### QC Testing

Biological Activity:	Kinase activity untested
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 50 mM Tris, 100 mM NaCl, 10% glycerol, pH 8.0.

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### 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:

Proteins are shipped with blue ice.

### Protein Background

CKB(Creatine kinase B type) contains 1 phosphagen kinase C-terminal domain and 1 phosphagen kinase N-terminal domain. It belongs to the ATP:guanido phosphotransferase family. CKB consists of a homodimer of two identical brain-type CK-B subunits. CKB is a cytoplasmic enzyme involved in cellular energy homeostasis, with certain fractions of the enzyme being bound to cell membranes, ATPases, and a variety of ATP-requiring enzymes in the cell. There, CKB forms tightly coupled microcompartments for in situ regeneration of ATP that has been used up. CKB reversibly catalyzes the transfer of "energy-rich" phosphate between ATP and creatine or between phospho-creatine (PCr) and ADP. Its functional entity is a homodimer in brain, smooth muscle as well as in other tissues and cells such as neuronal cells, retina, kidney, bone etc.

Reference

Wienker TF, et al. (1985) A dominant mutation causing ectopic expression of the creatine kinase B gene maps on chromosome 14. Cytogenet Cell Genet. 40:776.

Mariman EC, et al. (1989) Complete nucleotide sequence of the human creatine kinase B gene. Nucleic Acids Res. 17 (15):6385.

Bong S, et al. (2008) Structural studies of human brain-type creatine kinase complexed with the ADP-Mg<sup>2+</sup>-NO<sub>3</sub><sup>-</sup> creatine transition-state analogue complex. FEBS Letters. 582(28): 3959-65.

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