Data Sheet (Cat.No.TMPY-04408)

TargetMol

CAMKII beta/CAMK2B Protein, Human, Recombinant (His & GST)

General Information

Synonyms:	calcium/calmodulin-dependent protein kinase II beta;CAM2;CAMKB;CaMKII β/CAMK2B Protein, Human, Recombinant (His & GST);calcium/calmodulin-dependent protein kinase II β;CAMK2
Protein Construction:	A DNA sequence encoding the human CAMK2B isoform 2 (Q13554-3) (Met 1-Gln 503) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q13554-3
Molecular Weight:	84.2 kDa (predicted); 85 kDa (reducing conditions)

QC Testing

Biological Activity:	The specific activity was determined to be 300 nmol/min/mg using Autocamtide-2 synthetic peptide (KKALRRQETVDAL-amide) as substrate.
Purity:	> 60 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 500 mM NaCl, 2 mM GSH, 0.5 mM PMSF, 10% gly, 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

Calcium/calmodulin-dependent protein kinase II beta (CAMK2B) is a member of the serine/threonine protein kinase family and to the Ca(2+)/calmodulin-dependent protein kinase subfamily. CaMKII is an important player in prostate cancer cells ability to escape apoptosis under androgen ablation and facilitate the progression of prostate cancer cells to an androgen independent state. As a multifunctional protein kinase, the loss of activity may play a critical role in initiating the changes leading to ischemia-induced cell death. CaMKII are found to be important for the functions of immune cells. CaMKII can be activated by TLR ligands, and in turn promotes both

myeloid differentiating factor 88 and Toll/IL-1 receptor domain-containing adaptor protein-inducing IFN-beta-dependent inflammatory responses by directly activating TAK1 and IRF3. CAMKII has four subunit isoforms (alpha, beta, gamma, delta). It is possible that distinct isoforms of this chain have different cellular localizations and interact differently with calmodulin. The alpha- and beta-isoforms have narrow distributions restricted mainly to neuronal tissues, but the gamma- and delta-isoforms are ubiquitously expressed within neuronal and non-neuronal tissues. CAMK2B is important for controlling the direction of plasticity at the parallel fiber-Purkinje cell synapse. CaMK2 is involved in neuronal survival through the reorganization of the neuroarchitecture and that the regulation of this role is controlled at the level of gene expression. Because CaMK2B influences the expression of many neuroreceptors and influences neural outgrowth and pruning, its altered expression in the cerebral cortex in schizophrenia or depression may contribute to schizophrenia and depression.

Reference

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