

Human CAMK2B / CaMKII-beta Protein (His & GST Tag)

Catalog Number: 11738-H20B



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

CAM2; CAMK2; CAMKB

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.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 60 % as determined by SDS-PAGE

Bio Activity:

The specific activity was determined to be 300 nmol/min/mg using Autocamtide-2 synthetic peptide (KKALRRQETVDAL-amide) as substrate.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human CAMK2B/GST chimera consists of 740 amino acids and has a calculated molecular mass of 84.2 kDa. It migrates as an approximately 85 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, 2mM GSH, 0.5mM PMSF, 10% gly, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

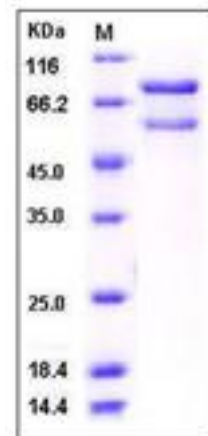
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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.

References

1. Hiestand DM, *et al.* (1992) Calcium/calmodulin dependent protein kinase II mRNA in the gerbil brain after cerebral ischemia. *Neurosci Lett.* 144(1-2): 75-8.
2. Shackelford DA, *et al.* (1995) Effect of cerebral ischemia on calcium/calmodulin-dependent protein kinase II activity and phosphorylation. *J Cereb Blood Flow Metab.* 15(3): 450-61.
3. Walikonis R S, *et al.* (2001) Densin-180 forms a ternary complex with the (alpha)-subunit of Ca2+/calmodulin-dependent protein kinase II and (alpha)-actinin. *J. Neurosci. (United States).* 21 (2): 423-33.

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