Human CAMK1G / CLICK III / CaMKIgamma Protein (His & GST Tag)

Catalog Number: 13148-H20B

Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

CLICK3; CLICKIII; dJ272L16.1; VWS1; CaMKIgamma; CLICK-III

Protein Construction:

A DNA sequence encoding the human CAMK1G isoform 1 (Q96NX5-1) (Met 1-Met 476) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

No Kinase Activity

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 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human CAMK1G/GST chimera consists of 713 amino acids and has a calculated molecular mass of 81 kDa. It migrates as an approximately 75 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Supplied as sterile 50mM Tris, 100mM NaCl, pH 8.0, 20% gly, 0.3mM DTT

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:

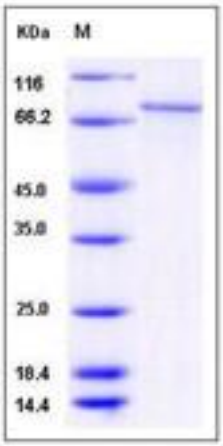
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Calmodulin-Dependent Protein Kinase (CaM Kinase) is a kind of protein phosphorylate multiple downstream targets. Concentration of cytosolic calcium functions as a second messenger that mediates a wide range of cellular responses. Calcium binds to calcium binding proteins (calmodulin/CaM) and stimulates the activity of a variety of enzymes, including CaM kinases referred to as CaM-kinases (CaMKs), such as CaMKI, CaMKII, CaMKIV and CaMKK. Calmodulin-dependent protein kinase CL3/CaMKIγ is a memberane-anchored CaMK belonging to the CaM kinase family. Its C-terminal region is uniquely modified by two sequential lipidification steps: prenylation followed by a kinase-activity-regulated palmitoylation. These modifications are essential for CaMKIγ membrane anchoring and targeting into detergent-resistant lipid microdomains in the dendrites. It has been found that CaMKIγ critically contributed to BDNF-stimulated dendritic growth. Raft insertion of CaMKIγ specifically promoted dendritogenesis of cortical neurons by acting upstream of RacGEF STEF and Rac, both present in lipid rafts. Thus, CaMKIγ may represent a key element in the Ca^{2+}-dependent and lipid-raft-delineated switch that turns on extrinsic activity-regulated dendrite formation in developing cortical neurons.

References

1.Davare MA, *et al*. (2009) Transient receptor potential canonical 5 channels activate Ca^{2+} / calmodulin kinase Igamma to promote axon formation in hippocampal neurons. J Neurosci. 29 (31): 9794-808.
2.Takemoto-Kimura S, *et al*. (2007) Regulation of dendritogenesis via a lipid-raft-associated Ca^{2+} / calmodulin - dependent protein kinase CLICK-III / CaMKIgamma. Neuron. 54 (5): 755-70.
3.Harrill JA, *et al*. (2010) Splice variant specific increase in Ca^{2+} / calmodulin-dependent protein kinase 1-gamma mRNA expression in response to acute pyrethroid exposure. J Biochem Mol Toxicol. 24 (3): 174-86.