

# Recombinant Human CAMK1G/CaMKI gamma Protein (His & GST Tag)



Catalog Number:PKSH030332

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

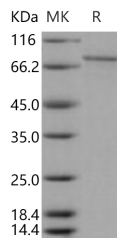
## Description

<b>Synonyms</b>	CLICK3;CLICKIII;dJ272L16.1;RP1-272L16.2;VWS1
<b>Species</b>	Human
<b>Expression Host</b>	Baculovirus-Insect Cells
<b>Sequence</b>	Met 1-Met 476
<b>Accession</b>	Q96NX5-1
<b>Calculated Molecular Weight</b>	81.0 kDa
<b>Observed molecular weight</b>	75 kDa
<b>Tag</b>	N-His-GST

## Properties

<b>Purity</b>	> 85 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.
<b>Shipping</b>	This product is provided as liquid. It is shipped at frozen temperature with blue ice/gel packs. Upon receipt, store it immediately at < - 20°C.
<b>Formulation</b>	Supplied as sterile solution of 50mM Tris, 100mM NaCl, pH 8.0, 20% glycerol, 0.3mM DTT
<b>Reconstitution</b>	Not Applicable

## Data



> 85 % as determined by reducing SDS-PAGE.

## Background

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/CaMKI $\gamma$  is a membrane-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 CaMKI $\gamma$  membrane anchoring and targeting into detergent-resistant lipid microdomains in the dendrites. It has been found that CaMKI $\gamma$  critically contributed to BDNF-stimulated dendritic growth. Raft insertion of CaMKI $\gamma$  specifically promoted dendritogenesis of cortical neurons by acting upstream of RacGEF STEF and Rac, both present in lipid rafts. Thus, CaMKI $\gamma$  may represent a key element in the Ca<sup>2+</sup>-dependent and lipid-raft-delineated switch that turns on extrinsic activity-regulated dendrite formation in

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developing cortical neurons.

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