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

Catalog Number: PKSH030332

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

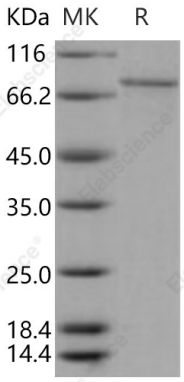
Description

Species	Human
Source	Baculovirus-Insect Cells-derived Human CAMK1G/CaMKI gamma protein Met 1-Met 476, with an N-terminal His & GST
Calculated MW	81.0 kDa
Observed MW	75 kDa
Accession	Q96NX5-1
Bio-activity	Not validated for activity

Properties

Purity	> 85 % as determined by reducing SDS-PAGE.
Concentration	Subject to label value.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile 50mM Tris, 100mM NaCl, pH 8.0, 20% gly, 0.3mM DTT

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/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 raft s. Thus, CaMKIγ may represent a key element in the Ca2+-dependent and lipid-raft-delineated switch that turns on extrinsic activity-regulated dendrite formation in developing cortical neurons.