



Recombinant Protein Technical Manual

**Recombinant Human CAMK1G/CaMKI gamma
Protein (His & GST Tag)**
RPES0851

Product Data:

Product SKU: RPES0851

Size: 20µg

Species: Human

Expression host: Baculovirus-Insect Cells

Uniprot: Q96NX5

Protein Information:

Molecular Mass: 81 kDa

AP Molecular Mass: 75 kDa

Tag: N-His & GST

Bio-activity:

Purity: > 85 % as determined by reducing SDS-PAGE.

Endotoxin: < 1.0 EU per µg as determined by the LAL method.

Storage: Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.

Shipping: 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.

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

Reconstitution: Please refer to the printed manual for detailed information.

Application:

Synonyms: CLICK3;CLICKIII;dJ272L16.1;RP1-272L16.2;VWS1

Immunogen Information:

Sequence: Met 1-Met 476

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 γ 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 γ membrane anchoring and targeting into detergent-resistant lipid microdomains in the dendrites. It has been found that CaMKI γ critically contributed to BDNF-stimulated dendritic growth. Raft insertion of CaMKI γ specifically promoted dendritogenesis of cortical neurons by acting upstream of RacGEF STEF and Rac, both present in lipid rafts. Thus, CaMKI γ 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.