



Recombinant Protein Technical Manual
Recombinant Human CAMK1/CaMKI-alpha Protein
RPES2676

Product Data:

Product SKU: RPES2676

Size: 20µg

Species: Human

Expression host: E. coli

Uniprot: NP_003647.1

Protein Information:

Molecular Mass: 41.5 kDa

AP Molecular Mass: 42 kDa

Tag:

Bio-activity:

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

Endotoxin: Please contact us for more information.

Storage: 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, 150mM NaCl, 10% glycerol, pH 7.5

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

Application:

Synonyms: Calcium/Calmodulin-Dependent Protein Kinase Type 1; CaM Kinase I; CaM-KI; CaM Kinase I Alpha; CaMKI-Alpha; CAMK1

Immunogen Information:

Sequence: Leu 2-Leu 370

Background:

Calcium/calmodulin-dependent protein kinase or CaM kinases are serine/threonine-specific protein kinases that are primarily regulated by the Calcium/calmodulin complex. These kinases show a memory effect on activation. CaM kinases activity can outlast the intracellular calcium transient that is needed to activate it. In neurons, this property is important for the induction of synaptic plasticity. Pharmacological inhibition of CaM kinases II blocks the induction of long-term potentiation. Upon activation, CaM kinases II phosphorylates postsynaptic glutamate receptors and changes the electrical properties of the synapse. Calcium/calmodulin-dependent protein kinase type 1D, also known as CaM kinase I delta, CaM kinase ID, CaMKI-like protein kinase, CKLiK and CAMK1D, is a member of the protein kinase superfamily and CaMK subfamily. It contains one protein kinase domain. CAMK1D is broadly expressed. It is highly and mostly expressed in polymorphonuclear leukocytes (neutrophilic and eosinophilic granulocytes) while little or no expression is observed in monocytes and lymphocytes. Engineered overexpression of CAMK1D in non-tumorigenic breast epithelial cells led to increased cell proliferation, and molecular and phenotypic alterations indicative of epithelial-mesenchymal transition (EMT), including loss of cell-cell adhesions and increased cell migration and invasion. CAMK1D is a potential therapeutic target with particular relevance to clinically unfavorable basal-like tumors.