

Recombinant Human CAMK1/CaMKI-alpha Protein

Catalog Number: PKSH030469



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

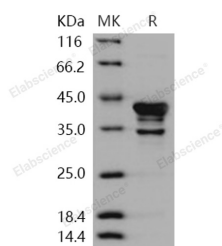
Description

Synonyms	Calcium/Calmodulin-Dependent Protein Kinase Type 1; CaM Kinase I; CaMKI; CaM Kinase I Alpha; CaMKI-Alpha; CAMK1
Species	Human
Expression Host	E.coli
Sequence	Leu 2-Leu 370
Accession	NP_003647.1
Calculated Molecular Weight	41.5 kDa
Observed molecular weight	42 kDa
Tag	None

Properties

Purity	> 85 % as determined by reducing SDS-PAGE.
Endotoxin	Please contact us for more information.
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, 150mM NaCl, 10% glycerol, pH 7.5 Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



> 85 % as determined by reducing SDS-PAGE.

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

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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.

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