Data Sheet (Cat.No.TMPY-04415)

TargetMol

CAMKI Protein, Human, Recombinant

General Information

Synonyms:	calcium/calmodulin-dependent protein kinase I;CAMKI
Protein Construction:	A DNA sequence encoding the human CAMK1 (NP_003647.1) (Leu 2-Leu 370) was expressed and purified, with two additional amino acids (Gly & Pro) at the N-terminus. Predicted N terminal: Gly
Species:	Human
Expression Host:	E. coli
Accession:	B0YIY3
Molecular Weight:	41.5 kDa (predicted); 42 kDa (reducing conditions)

QC Testing

Biological Activity:	The specific activity was determined to be > 70 nmol/min/mg using Autocamtide-2 synthetic peptide (KKALRRQETVDAL-amide) as substrate.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Supplied as sterile 50 mM Tirs, 150 mM NaCl, 10% glycerol, pH 7.5.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Calcium/calmodulin-dependent protein kinase orCaM kinases are serine/threonine-specific protein kinasesthat 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. Inneurons, this property is important for the induction of synaptic plasticity. Pharmacological inhibition of CaM kinases II blocks the induction oflong-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 theprotein kinase superfamily and CaMK subfamily. It contains oneprotein 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.

Reference

Lisman, JE. et al., 1985, Proc Natl Acad Sci USA. 82 (9): 3055-7.
Bergamaschi, A. et al., 2008, Mol Oncol. 2 (4): 327-39.
White RB. et al., 2008, Physiological genomics, 33 (1): 41-9.
Schleinitz, D. et al., 2010, Horm Metab Res. 42 (1): 14-22.

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