Data Sheet (Cat.No.TMPY-04373)

TargetMol

CAMKII alpha/CAMK2A Protein, Human, Recombinant (GST)

General Information

Synonyms:	calcium/calmodulin-dependent protein kinase II alpha;calcium/calmodulin-dependent protein kinase II α;CAMKA;CaMKII α/CAMK2A
Protein Construction:	A DNA sequence encoding the human CAMK2A isoform 2 (NP_741960.1) (Met 1-His 478) was fused with the GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q7LDD5
Molecular Weight:	80.3 kDa (predicted); 80 kDa (reducing conditions)

QC Testing

Biological Activity:	The specific activity was determined to be 160 nmol/min/mg using Autocamtide-2 synthetic peptide (KKALRRQETVDAL-amide) as substrate.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 50 mM Tris, 100 mM NaCl, 0.5 mM PMSF, 0.5 mM Reduced Glutathione, pH 8.0.

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

Ca2+/calmodulin-dependent protein kinase2A (CAMK2A) belongs to the serine/threonine protein kinase family and, together with other 28 different isoforms, belongs to the Ca2+/ calmodulin-dependent protein kinase subfamily. CaM kinase II is thought to be an important mediator of learning and memory and is also necessary for Ca2+homeostasis and reuptake in cardiomyocytes chloride transport in epithelia, positive T-cell selection, and CD8 T-cell activation. CAMKIIA is one of the major forms of CAMKII. It has been found to play a critical role in sustaining activation of CAMKII at the postsynaptic density. Studies have found that knockout mice without CAMKIIA demonstrate a low frequency of LTP. Additionally, these mice do not form persistent, stable place cells in the

hippocampus.

Reference

Lin CR,et al.(1987). Molecular cloning of a brain-specific calcium/calmodulin-dependent protein kinase. Proc Natl Acad Sci U S A. 84 (16): 5962-6.
Walikonis RS,et al.(2001) Densin-180 forms a ternary complex with the (alpha)-subunit of Ca2+/calmodulin-dependent protein kinase II and (alpha)-actinin. J Neurosci. 21 (2): 423-33.
Gardoni F,et al.(2003) CaMKII-dependent phosphorylation regulates SAP97/NR2A interaction. J Biol Chem. 278 (45): 44745-52.

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