

Active Recombinant Rat Camk2a

Cat. No. Camk2a-746R **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant rat Ca ²⁺ /calmodulin kinase II α -subunit consisting of amino acids 1-325 (corresponding to monomeric α -subunit) was expressed in <i>S. frugiperda</i> insect cells. MW = 33 kDa.
Species	Rat
Source	<i>S. frugiperda</i>
Protein Length	1-325 a.a.
Description	CaM kinase II is a serine/threonine kinase that phosphorylates a wide variety of intracellular proteins. Reportedly involved in the modulation of neurite growth by cAMP. Lower levels of CaM kinase II α -subunit predispose neurons to ischemic damage.
Purity	≥90% by SDS-PAGE.
Form	Liquid. In 100 mM NaCl, 50 mM HEPES, 1 mM DTT, 0.1 mM EDTA, 50% glycerol, 0.02% Tween 20 Detergent, pH 7.5.
Contaminants	Phosphatases, proteases: none detected.
Activity	≥250,000 units/ml.
Unit Definition	One unit is defined as the amount of enzyme that will catalyze the transfer of 1 pmol

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phosphate to Autocamtide-2, KKALRRQETVDAL, per min at 30°C, pH 7.5.

Recommended Reaction Conditions

1) Dilute CaM kinase II into 20 mM Tris-HCl, 10 mM MgCl₂, 0.5 mM DTT, and 0.1 mM EDTA, pH 7.5. 2) Add 2.4 μM calmodulin, 2 mM CaCl₂, 100 μM ATP, and [32P]-γATP at 100 μCi/pole. 3) Incubate at 30°C.

Toxicity

Standard Handling (MSDS available upon request).

Storage

≤ -70°C. Avoid freeze/thaw. Following initial thaw, aliquot and freeze (-70°C).

GENE INFORMATION

Gene Name

Camk2a calcium/calmodulin-dependent protein kinase II alpha [*Rattus norvegicus*]

Synonyms

Camk2a; calcium/calmodulin-dependent protein kinase II alpha; PKCCD; PK2CDD; calcium/calmodulin-dependent protein kinase type II subunit alpha; alpha CaM kinase II; caMK-II subunit alpha; caM-kinase II alpha chain; caM kinase II subunit alpha; Ca²⁺/calmodulin-dependent protein kinase II alpha; calcium/calmodulin-dependent protein kinase II alpha subunit; calcium/calmodulin-dependent protein kinase type II alpha chain; calcium/calmodulin-dependent protein kinase (CaM kinase) II alpha; EC 2.7.11.17

Gene ID

25400

mRNA Refseq

NM_012920

Protein Refseq

NP_037052

UniProt ID

P11275

Chromosome

18q11

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Location	
Pathway	Calcium signaling pathway; ErbB signaling pathway; Glioma; GnRH signaling pathway; Long-term potentiation; Melanogenesis; Neurotrophin signaling pathway; Olfactory transduction; Oocyte meiosis; Wnt signaling pathway
Function	ATP binding; calmodulin binding; calmodulin-dependent protein kinase activity; kinase activity; nucleotide binding; protein binding; transferase activity
PDB rendering based on 1hxx.	