

#### OriGene Technologies, Inc.

9620 Medical Center Drive, Ste 200 Rockville, MD 20850, US Phone: +1-888-267-4436 https://www.origene.com techsupport@origene.com EU: info-de@origene.com CN: techsupport@origene.cn

# Product datasheet for AP55687PU-S

## CAMK2A pThr305 Rabbit Polyclonal Antibody

### **Product data:**

Product Type:	Primary Antibodies
Applications:	IHC, WB
Recommended Dilution:	Western blot: 1:500~1:1000. Immunohistochemistry on paraffin sections: 1:50~1:100.
Reactivity:	Human, Mouse
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide sequence around phosphorylation site of threonine 305 (I-L-T(p)-T-M) derived from Human CaMK2 $\alpha/\beta/\delta$ (KLH-conjugated)
Specificity:	The antibody detects endogenous levels of CaMKII only when phosphorylated at threonine 305.
Formulation:	Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol State: Aff - Purified State: Liquid Ig fraction
Concentration:	lot specific
Purification:	Affinity chromatography using epitope-specific peptide
Conjugation:	Unconjugated
Storage:	Upon receipt, store undiluted (in aliquots) at -20°C. Avoid repeated freezing and thawing.
Stability:	Shelf life: one year from despatch.
Predicted Protein Size:	54 kDa
Gene Name:	calcium/calmodulin dependent protein kinase II alpha
Database Link:	<u>Entrez Gene 815 Human</u> <u>Q9UQM7</u>



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#### **GRIGENE** CAMK2A pThr305 Rabbit Polyclonal Antibody – AP55687PU-S

Background: Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca2+/calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca2+ transport in skeletal muscle. In neurons, plays an essential structural role in the reorganization of the actin cytoskeleton during plasticity by binding and bundling actin filaments in a kinase-independent manner. This structural function is required for correct targeting of CaMK2A, which acts downstream of NMDAR to promote dendritic spine and synapse formation and maintain synaptic plasticity which enables long-term potentiation (LTP) and hippocampus-dependent learning. In developing hippocampal neurons, promotes arborization of the dendritic tree and in mature neurons, promotes dendritic remodeling. Participates in the modulation of skeletal muscle function in response to exercise. In slowtwitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca2+ transport and in fast-twitch muscle participates in the control of Ca2+ release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2.

# Synonyms: CAMKA, KIAA0968, CaM-kinase II alpha chain, CaM kinase II subunit alpha, CaMK-II subunit alpha



Western blot analysis of extracts from 3T3 cells (Lane 2), using CaMK2a/ $\beta$ /?<sup>'</sup> (Phospho-Thr305) Antibody. The lane on the left is treated with antigen-specific peptide.

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Immunohistochemical analysis of paraffinembedded human brain tissue using CaMKII (Phospho-Thr305) Antibody (left)or the same antibody preincubated with blocking peptide (right).

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