

CAMK2A (CAMK2 alpha) Antibody (C-term) Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP7206b

Specification

CAMK2A (CAMK2 alpha) Antibody (C-term) - Product Information

Application Primary Accession Other Accession Reactivity Predicted Host Clonality Isotype Antigen Region WB, IHC-P,E <u>O9UOM7</u> <u>P11275</u>, <u>P11798</u> Human Mouse, Rat Rabbit Polyclonal Rabbit IgG 446-478

CAMK2A (CAMK2 alpha) Antibody (C-term) - Additional Information

Gene ID 815

Other Names

Calcium/calmodulin-dependent protein kinase type II subunit alpha, CaM kinase II subunit alpha, CaMK-II subunit alpha, CAMK2A, CAMKA, KIAA0968

Target/Specificity

This CAMK2A (CAMK2 alpha) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 446-478 amino acids from the C-terminal region of human CAMK2A (CAMK2 alpha).

Dilution WB~~1:1000 IHC-P~~1:50~100 E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

CAMK2A (CAMK2 alpha) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

CAMK2A (CAMK2 alpha) Antibody (C-term) - Protein Information



Name CAMK2A

Synonyms CAMKA, KIAA0968

Function Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in various processes, such as synaptic plasticity, neurotransmitter release and long-term potentiation (PubMed:<u>14722083</u>). Member of the NMDAR signaling complex in excitatory synapses, it regulates NMDAR-dependent potentiation of the AMPAR and therefore excitatory synaptic transmission (By similarity). Regulates dendritic spine development (PubMed:<u>28130356</u>). Also regulates the migration of developing neurons (PubMed:<u>29100089</u>). Phosphorylates the transcription factor FOXO3 to activate its transcriptional activity (PubMed:<u>23805378</u>). Phosphorylates the transcription factor ETS1 in response to calcium signaling, thereby decreasing ETS1 affinity for DNA (By similarity). In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK- STAT signaling pathway (PubMed:<u>11972023</u>). In response to interferon- beta (IFN-beta) stimulation, stimulates the JAK-STAT signaling pathway (PubMed:<u>35568036</u>). Acts as a negative regulator of 2- arachidonoylglycerol (2-AG)-mediated synaptic signaling via modulation of DAGLA activity (By similarity).

Cellular Location

Synapse {ECO:0000250|UniProtKB:P11275}. Postsynaptic density {ECO:0000250|UniProtKB:P11275}. Cell projection, dendritic spine. Cell projection, dendrite. Note=Postsynaptic lipid rafts {ECO:0000250|UniProtKB:P11275}

CAMK2A (CAMK2 alpha) Antibody (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

CAMK2A (CAMK2 alpha) Antibody (C-term) - Images



Western blot analysis of anti-CAMK2 alpha C-term Pab (Cat. #AP7206b) in 293 cell lysate. CAMK2



alpha (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Formalin-fixed and paraffin-embedded human brain tissue reacted with CAMK2 alpha Antibody (C-term) (Cat.#AP7206b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

CAMK2A (CAMK2 alpha) Antibody (C-term) - Background

CaM-kinase II (CAMK2) is a prominent Ser/Thr protein kinase in the central nervous system that may function in long-term potentiation and neurotransmitter release. Likely autophosphorylation of Thr-286 allows the kinase to switch from a calmodulin-dependent to a calmodulin-independent state. CAMK2 is composed of four different chains: alpha, beta, gamma, and delta. The different isoforms assemble into homo- or heteromultimeric holoenzymes composed of 8 to 12 subunits.

CAMK2A (CAMK2 alpha) Antibody (C-term) - References

Blume-Jensen P, et al. Nature 2001. 411: 355. Cantrell D, J. Cell Sci. 2001. 114: 1439. Jhiang S Oncogene 2000. 19: 5590. Manning G, et al. Science 2002. 298: 1912. Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359. Robertson, S. et al. Trends Genet. 2000. 16: 368. Robinson D, et al. Oncogene 2000. 19: 5548. Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889. Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561.



Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.