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Goat Anti-CAMK2A Antibody
Peptide-affinity purified goat antibody
Catalog # AF1184a

Specification

Goat Anti-CAMK2A Antibody - Product Information

Application	**WB, IHC, E**
Primary Accession	Q9UQM7
Other Accession	NP_741960, 815, 12322 (mouse), 25400 (rat)
Reactivity	**Human, Mouse**
Predicted	**Rat, Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**54088**

Goat Anti-CAMK2A Antibody - 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, 2.7.11.17, CAMK2A, CAMKA, KIAA0968

Dilution
WB~~1:1000
IHC~~1:100~500
E~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-CAMK2A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-CAMK2A Antibody - 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:14722083). 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:28130356). Also regulates the migration of developing neurons (PubMed:29100089). Phosphorylates the transcription factor FOXO3 to activate its transcriptional activity (PubMed:23805378). 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:11972023). In response to interferon- beta (IFN-beta) stimulation, stimulates the JAK-STAT signaling pathway (PubMed:35568036). Acts as a negative regulator of 2- arachidonoylglycerol (2-AG)-mediated synaptic signaling via modulation of DAGLA activity (By similarity).

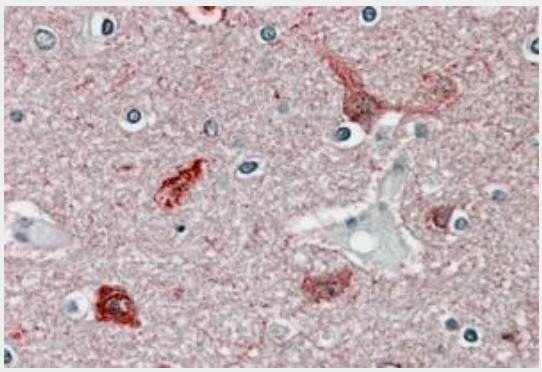
Cellular Location
Synapse {ECO:0000250|UniProtKB:P11275}. Postsynaptic density {ECO:0000250|UniProtKB:P11275}. Cell projection, dendritic spine. Cell projection, dendrite. Note=Postsynaptic lipid rafts {ECO:0000250|UniProtKB:P11275}

Goat Anti-CAMK2A Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-CAMK2A Antibody - Images



AF1184a (3.8 µg/ml) staining of paraffin embedded Human Brain Cortex. Steamed antigen

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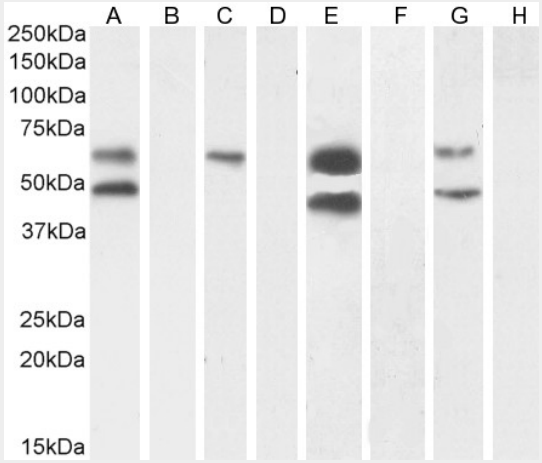
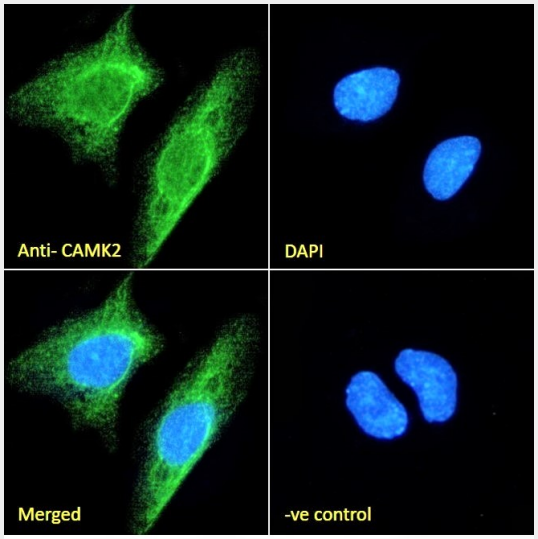
retrieval with citrate buffer pH 6, AP-staining.



EB09376 (1µg/ml) staining of Human Cerebral Cortex (A) + peptide (B), (0.5µg/ml) Human Cerebellum (C) + peptide (D), and (0.1ug/ml) Mouse Brain (E) + peptide (F) and Rat Brain (G) + peptide (H) lysate, (35µg protein in RIPA buffer). Detected by chemiluminescence.



EB09376 Immunofluorescence analysis of paraformaldehyde fixed Neuro2a cells, permeabilized with 0.15% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml), showing cytoplasmic staining. The nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml).

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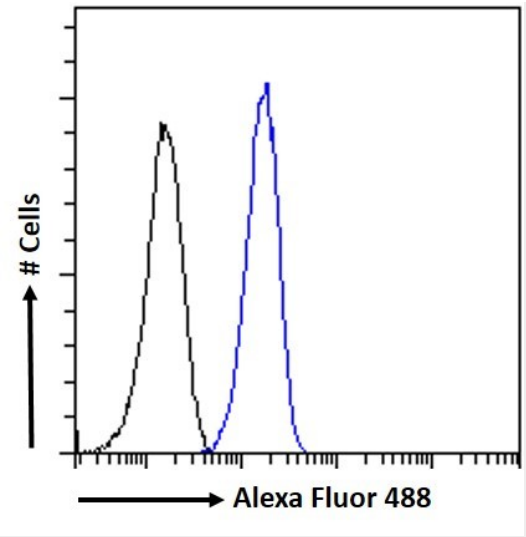

EB09376 Flow cytometric analysis of paraformaldehyde fixed Neuro2a cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (1ug/ml). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.

Goat Anti-CAMK2A Antibody - Background

The product of this gene belongs to the serine/threonine protein kinases family, and to the Ca(2+)/calmodulin-dependent protein kinases subfamily. Calcium signaling is crucial for several aspects of plasticity at glutamatergic synapses. This calcium calmodulin-dependent protein kinase is composed of four different chains: alpha, beta, gamma, and delta. The alpha chain encoded by this gene is required for hippocampal long-term potentiation (LTP) and spatial learning. In addition to its calcium-calmodulin (CaM)-dependent activity, this protein can undergo autophosphorylation, resulting in CaM-independent activity. Two transcript variants encoding distinct isoforms have been identified for this gene.

Goat Anti-CAMK2A Antibody - References

Personalized smoking cessation: interactions between nicotine dose, dependence and quit-success genotype score. Rose JE, et al. Mol Med, 2010 Jul-Aug. PMID 20379614.
Ca2+/calmodulin-dependent protein kinase II alpha is required for the initiation and maintenance of opioid-induced hyperalgesia. Chen Y, et al. J Neurosci, 2010 Jan 6. PMID 20053885.
Regulation of the proteasome by neuronal activity and calcium/calmodulin-dependent protein kinase II. Djakovic SN, et al. J Biol Chem, 2009 Sep 25. PMID 19638347.
Phosphorylation status of the NR2B subunit of NMDA receptor regulates its interaction with calcium/calmodulin-dependent protein kinase II. Raveendran R, et al. J Neurochem, 2009 Jul. PMID 19453375.
Case-control association study of 65 candidate genes revealed a possible association of a SNP of HTR5A to be a factor susceptible to bipolar disease in Bulgarian population. Yosifova A, et al. J Affect Disord, 2009 Sep. PMID 19328558.