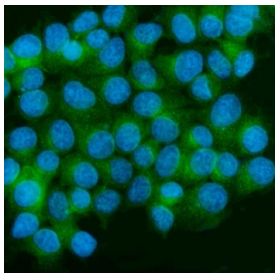
CAMK II alpha Antibody / Calcium Signaling Kinase Antibody (RQ5962)

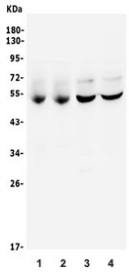
Catalog No.	Formulation	Size
RQ5962	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

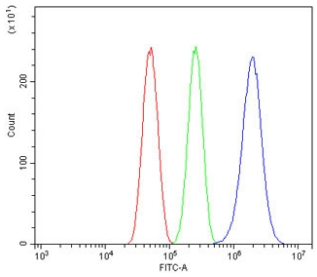
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q9UQM7
Applications	Western blot: 0.5-1ug/ml Flow cytometry: 1-3ug/million cells Immunofluorescence: 2-4ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This CAMK II alpha Antibody / Calcium Signaling Kinase Antibody is available for research use only.



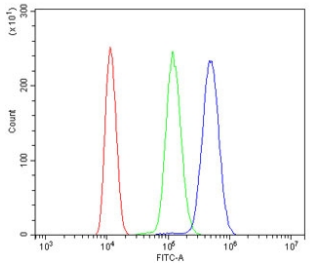
CAMK II alpha Antibody MCF7 Cell IF. Immunofluorescent staining of MCF7 cells with CAMK II alpha antibody (green). Heat-induced epitope retrieval (HIER) was performed by steaming sections in pH 6 citrate buffer for 20 minutes prior to staining. Nuclei are counterstained with DAPI (blue). CAMK II alpha immunoreactivity is observed predominantly within the cytoplasm, consistent with the expected localization of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a calcium signaling kinase that regulates calcium-dependent signal transduction, protein phosphorylation, and intracellular signaling pathways.



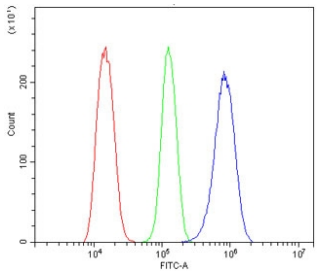
CAMK II alpha Antibody Rat and Mouse Brain WB. Western blot testing of different lots of 1-2) rat brain and 3-4) mouse brain tissue lysates with CAMK II alpha antibody. A prominent immunoreactive band is detected at approximately 54 kDa in all lysates, consistent with the predicted molecular weight of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A). An additional band at approximately 65 kDa is consistently observed and likely represents a phosphorylated or other post-translationally modified form of this calcium signaling kinase, which plays essential roles in synaptic plasticity, learning, memory, and neuronal signal transduction.



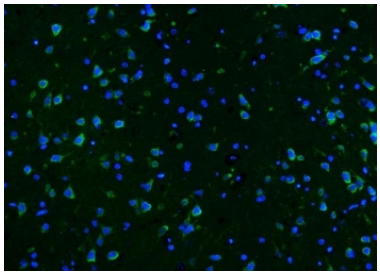
CAMK II alpha Antibody U-87 MG Cell FACS. Flow cytometric analysis of human U-87 MG cells stained with CAMK II alpha antibody at 1 ug/million cells following goat serum blocking. Red: cells alone. Green: isotype control. Blue: CAMK II alpha antibody. The pronounced rightward shift of the antibody-stained population relative to the isotype control demonstrates specific detection of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a calcium signaling kinase that regulates calcium-dependent signal transduction, synaptic plasticity, protein phosphorylation, and neuronal signaling pathways.



CAMK II alpha Antibody ANA-1 Cell FACS. Flow cytometric analysis of mouse ANA-1 cells stained with CAMK II alpha antibody at 1 ug/million cells following goat serum blocking. Red: cells alone. Green: isotype control. Blue: CAMK II alpha antibody. The rightward shift of the antibody-stained population relative to the isotype control demonstrates specific detection of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a calcium signaling kinase that regulates calcium-dependent signal transduction, protein phosphorylation, synaptic plasticity, and neuronal signaling pathways.



CAMK II alpha Antibody NRK Cell FACS. Flow cytometric analysis of rat NRK cells stained with CAMK II alpha antibody at 1 ug/million cells following goat serum blocking. Red: cells alone. Green: isotype control. Blue: CAMK II alpha antibody. The pronounced rightward shift of the antibody-stained population relative to the isotype control demonstrates specific detection of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a calcium signaling kinase that regulates calcium-dependent signal transduction, protein phosphorylation, synaptic plasticity, and downstream cellular signaling pathways.



CAMK II alpha Antibody Rat Brain IF. Immunofluorescent staining of FFPE rat brain tissue with CAMK II alpha antibody (green). Heat-induced epitope retrieval (HIER) was performed by steaming sections in pH 8 EDTA buffer for 20 minutes prior to staining. Nuclei are counterstained with DAPI (blue). CAMK II alpha immunoreactivity is observed in neuronal cell bodies and processes, consistent with the expected distribution of Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a calcium signaling kinase that regulates synaptic plasticity, protein phosphorylation, learning, memory, and neuronal signal transduction.

Description

CAMK II alpha Antibody recognizes Calcium/Calmodulin Dependent Protein Kinase II Alpha (CAMK2A), a serine/threonine protein kinase that serves as one of the principal mediators of calcium-dependent signal transduction in neurons. Activation of CAMK2A occurs when intracellular calcium binds calmodulin, triggering kinase activation through autophosphorylation and enabling sustained signaling even after calcium concentrations decline. This unique regulatory mechanism allows CAMK2A to function as a molecular integrator of neuronal activity, making CAMK II alpha Antibody an essential tool for investigating calcium signaling, synaptic plasticity, and nervous system function.

CAMK2A is highly enriched in the brain, particularly within the hippocampus, cerebral cortex, and other regions involved in learning and memory. The kinase regulates neurotransmitter receptor trafficking, dendritic spine remodeling, synaptic strength, and long-term potentiation, processes that underlie memory formation and cognitive function. Beyond the central nervous system, CAMK2A participates in calcium-dependent regulation of gene expression, cytoskeletal organization, and intracellular signaling networks. Because of these diverse functions, CAMK II alpha Antibody is widely used in neuroscience, cell signaling, and neurobiology research.

Abnormal CAMK2A activity has been associated with numerous neurological and neuropsychiatric disorders, including Alzheimer's disease, Parkinson's disease, epilepsy, autism spectrum disorders, schizophrenia, ischemic brain injury, and intellectual disability. Altered kinase activation, dysregulated phosphorylation, or genetic variants affecting CAMK2A can disrupt synaptic communication and neuronal survival, contributing to cognitive impairment and disease progression. Ongoing studies continue to investigate CAMK2A as both a biomarker and a potential therapeutic target for neurological disorders, further increasing the research value of CAMK II alpha Antibody.

NSJ Bioreagents offers highly validated CAMK II alpha Antibody products for reliable detection of endogenous CAMK2A in human and animal samples. These antibodies support investigations into calcium signaling pathways, neuronal development, synaptic plasticity, learning and memory, neurodegeneration, and intracellular kinase signaling while providing dependable performance across western blotting, immunohistochemistry, immunofluorescence, flow cytometry, immunoprecipitation, and related research applications.

Learn more about protein kinases, calcium-dependent signaling and intracellular signaling pathways on our Signal Transduction Antibodies page.

Application Notes

Optimal dilution of the CAMK II alpha Antibody / Calcium Signaling Kinase Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids M1-H478) was used as the immunogen for the CAMK II alpha antibody.

Storage

After reconstitution, the CAMK II alpha antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

CAMK2A antibody, Calcium/Calmodulin Dependent Protein Kinase II Alpha antibody, CaMKII alpha antibody, CaM Kinase II Alpha antibody, Calcium Calmodulin Dependent Protein Kinase 2 Alpha antibody, CAMK II alpha antibody

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