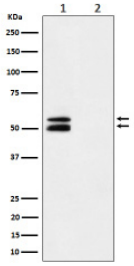
Phospho-CaMKII alpha (T286) Antibody / CAMK2A [clone 31C26] (FY12828)

Catalog No.	Formulation	Size
FY12828	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

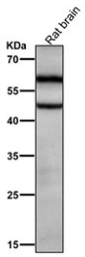
Recombinant RABBIT MONOCLONAL

Bulk quote request

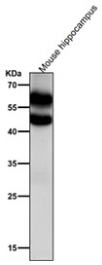
Availability	2-3 weeks
Species Reactivity	Mouse, Rat
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31C26
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q9UQM7
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200
Limitations	This Phospho-CaMKII alpha (T286) antibody is available for research use only.



Phospho-CaMKII alpha (Thr286) western blot of mouse brain using Phospho-CaMKII alpha (T286) antibody. Lane 1, strong ~50/55 kDa doublet consistent with different phosphorylation states of CaMKII alpha; lane 2, lambda phosphatase treatment abolishes the signal, confirming phospho-specificity.



Rat brain tissue lysate tested with the Phospho-CaMKII alpha (T286) antibody at 1:2000 dilution for 1 hour at room temperature.



Mouse brain tissue lysate tested with the Phospho-CaMKII alpha (T286) antibody at 1:2000 dilution for 1 hour at room temperature. Phospho-CaMKII western of mouse hippocampus using pT286 antibody shows a ~50 kDa band (CaMKII alpha) and a ~60 kDa band (possible cross-reactive CaMKII beta pT287), consistent with isoform expression in hippocampus and phosphorylation-dependent mobility shifts.

Description

Phospho-CaMKII alpha (T286) antibody detects calcium/calmodulin-dependent protein kinase II alpha when phosphorylated at threonine 286. The protein is encoded by the CAMK2A gene and is commonly referred to as CaM kinase II alpha, CaMK-II subunit alpha, and calcium/calmodulin-dependent protein kinase type II alpha chain. CaMKII alpha is a serine/threonine kinase expressed abundantly in the brain, where it regulates synaptic plasticity, learning, and memory. Autophosphorylation at threonine 286 converts the kinase into a calcium/calmodulin-independent active form, a hallmark event in long-term potentiation and neuronal signaling.

Phospho-CaMKII alpha (T286) antibody is widely applied in neuroscience, synaptic biology, and signaling research. Detecting phosphorylation at this site provides a direct measure of CaMKII activation, linking cellular activity to memory formation. In neurons, Thr286 phosphorylation prolongs kinase activity beyond transient calcium spikes, enabling sustained synaptic strengthening. By targeting this phosphorylation event, researchers can explore how activity-dependent signaling translates into lasting changes in connectivity.

Applications for Phospho-CaMKII alpha (T286) antibody include western blotting, immunohistochemistry, immunofluorescence, and ELISA. Western blot assays detect phosphorylated CaMKII alpha isoforms in brain lysates, immunohistochemistry maps activation in hippocampus and cortex, and immunofluorescence reveals localization at dendritic spines. These methods provide detailed views of synaptic signaling in vitro and in vivo.

Phosphorylation at Thr286 has been extensively studied in relation to long-term potentiation, a cellular mechanism of memory storage. Abnormal regulation of CaMKII phosphorylation contributes to neurological disorders, including Alzheimer disease, schizophrenia, and epilepsy. By applying Phospho-CaMKII alpha (T286) antibody, scientists can investigate disease-related disruptions in synaptic plasticity.

Beyond neuroscience, CaMKII alpha also participates in cardiac signaling and metabolism. Phosphorylation at Thr286 has been detected in cardiac stress responses and metabolic regulation. The antibody therefore supports research into CaMKII biology across systems. NSJ Bioreagents offers Phospho-CaMKII alpha (T286) antibody with validated specificity, ensuring reliable results in neuronal and disease studies.

Application Notes

Optimal dilution of the Phospho-CaMKII alpha (T286) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-CaMKII alpha (T286) was used as the immunogen for the Phospho-CaMKII alpha (T286) antibody. Due to the conserved nature of the epitope, the antibody will likely also detect Phospho-CaMKII beta (T287).

Storage

Store the Phospho-CaMKII alpha (T286) antibody at -20oC.