

CAMK2B / CaMKII Beta Antibody (clone S11)
Mouse Monoclonal Antibody
Catalog # ALS13283**Specification**

CAMK2B / CaMKII Beta Antibody (clone S11) - Product Information

Application	WB, IHC
Primary Accession	Q13554
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	73kDa KDa

CAMK2B / CaMKII Beta Antibody (clone S11) - Additional Information**Gene ID** 816**Other Names**

Calcium/calmodulin-dependent protein kinase type II subunit beta, CaM kinase II subunit beta, CaMK-II subunit beta, 2.7.11.17, CAMK2B, CAM2, CAMK2, CAMKB

Reconstitution & Storage

Store at -20°C. Aliquot to avoid freeze/thaw cycles.

Precautions

CAMK2B / CaMKII Beta Antibody (clone S11) is for research use only and not for use in diagnostic or therapeutic procedures.

CAMK2B / CaMKII Beta Antibody (clone S11) - Protein Information**Name** CAMK2B**Synonyms** CAM2, CAMK2, CAMKB**Function**

Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca(2+) transport in skeletal muscle (PubMed:16690701). 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. Also regulates the migration of developing neurons (PubMed:29100089). Participates in the modulation of skeletal muscle function in

response to exercise (PubMed:16690701). In slow-twitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca(2+) transport and in fast-twitch muscle participates in the control of Ca(2+) release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2. In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK-STAT signaling pathway (By similarity). Phosphorylates reticulophagy regulator RETREG1 at 'Ser-151' under endoplasmic reticulum stress conditions which enhances RETREG1 oligomerization and its membrane scission and reticulophagy activity (PubMed:31930741).

Cellular Location

Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Sarcoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side. Synapse {ECO:0000250|UniProtKB:P08413} Note=In slow-twitch muscle, evenly distributed between longitudinal SR and junctional SR

Tissue Location

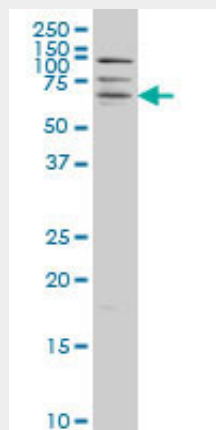
Widely expressed. Expressed in adult and fetal brain. Expression is slightly lower in fetal brain. Expressed in skeletal muscle.

CAMK2B / CaMKII Beta Antibody (clone S11) - Protocols

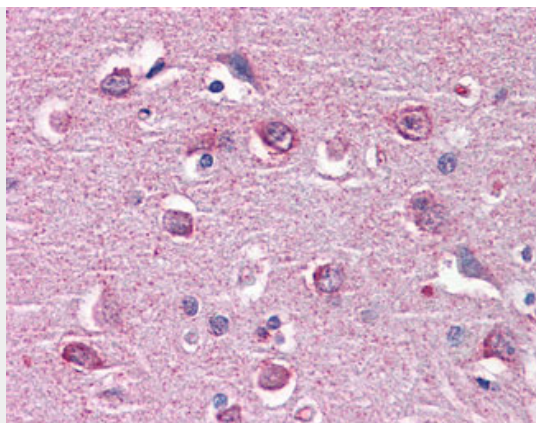
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

CAMK2B / CaMKII Beta Antibody (clone S11) - Images



CAMK2B monoclonal antibody, clone S11 Western blot of CAMK2B expression in HeLa NE.



Anti-CAMK2B antibody IHC of human brain, cortex.

CAMK2B / CaMKII Beta Antibody (clone S11) - Background

Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca^{2+} /calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca^{2+} 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 slow-twitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca^{2+} transport and in fast-twitch muscle participates in the control of Ca^{2+} release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2.

CAMK2B / CaMKII Beta Antibody (clone S11) - References

- Wang P., et al. FEBS Lett. 475:107-110(2000).
Leddy J.J., et al. Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
Li G.Y., et al. Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
Rochlitz H., et al. Diabetologia 43:465-473(2000).
Ota T., et al. Nat. Genet. 36:40-45(2004).