

CAMK2 beta Antibody (C-term) Blocking Peptide
Synthetic peptide
Catalog # BP7207a**Specification**

CAMK2 beta Antibody (C-term) Blocking Peptide - Product InformationPrimary Accession [Q13554](#)**CAMK2 beta Antibody (C-term) Blocking Peptide - 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, CAMK2B, CAM2, CAMK2, CAMKB

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP7207a](/product/products/AP7207a) was selected from the C-term region of human CAMK2 beta. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CAMK2 beta Antibody (C-term) Blocking Peptide - 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: <http://www.uniprot.org/citations/16690701> target="_blank">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.

CAMK2 beta Antibody (C-term) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

CAMK2 beta Antibody (C-term) Blocking Peptide - Images

CAMK2 beta Antibody (C-term) Blocking Peptide - 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.

CAMK2 beta Antibody (C-term) Blocking Peptide - References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002). Wang, P., et al., FEBS Lett. 475(2):107-110 (2000). Rochlitz, H., et al., Diabetologia 43(4):465-473 (2000). Tombes, R.M., et al., Biochim. Biophys. Acta 1355(3):281-292 (1997).