

**Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide**  
**Synthetic peptide**  
**Catalog # BP8463b****Specification**

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**Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Product Information**

Primary Accession [O08209](#)  
Other Accession [P35813](#)

**Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Additional Information**

**Gene ID** 5530

**Other Names**

Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform, CAM-PRP catalytic subunit, Calmodulin-dependent calcineurin A subunit alpha isoform, PPP3CA, CALNA, CNA

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP8463b](/product/products/AP8463b) was selected from the C-term region of human PPP3CA. 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.

**Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Protein Information**

**Name** PPP3CA ([HGNC:9314](#))

**Synonyms** CALNA, CNA

**Function**

Calcium-dependent, calmodulin-stimulated protein phosphatase which plays an essential role in the transduction of intracellular Ca(2+)-mediated signals (PubMed:[15671020](http://www.uniprot.org/citations/15671020), PubMed:[18838687](http://www.uniprot.org/citations/18838687), PubMed:[19154138](http://www.uniprot.org/citations/19154138), PubMed:[23468591](http://www.uniprot.org/citations/23468591), PubMed:[30254215](http://www.uniprot.org/citations/30254215)). Many of the substrates contain a PxIxIT motif and/or a LxVP motif (PubMed:[30254215](#)).

[17498738](http://www.uniprot.org/citations/17498738), PubMed: [17502104](http://www.uniprot.org/citations/17502104), PubMed: [22343722](http://www.uniprot.org/citations/22343722), PubMed: [23468591](http://www.uniprot.org/citations/23468591), PubMed: [27974827](http://www.uniprot.org/citations/27974827)). In response to increased  $\text{Ca}^{2+}$  levels, dephosphorylates and activates phosphatase SSH1 which results in cofilin dephosphorylation (PubMed: [15671020](http://www.uniprot.org/citations/15671020)). In response to increased  $\text{Ca}^{2+}$  levels following mitochondrial depolarization, dephosphorylates DNM1L inducing DNM1L translocation to the mitochondrion (PubMed: [18838687](http://www.uniprot.org/citations/18838687)). Positively regulates the CACNA1B/CAV2.2-mediated  $\text{Ca}^{2+}$  release probability at hippocampal neuronal soma and synaptic terminals (By similarity). Dephosphorylates heat shock protein HSPB1 (By similarity). Dephosphorylates and activates transcription factor NFATC1 (PubMed: [19154138](http://www.uniprot.org/citations/19154138)). In response to increased  $\text{Ca}^{2+}$  levels, regulates NFAT-mediated transcription probably by dephosphorylating NFAT and promoting its nuclear translocation (PubMed: [26248042](http://www.uniprot.org/citations/26248042)). Dephosphorylates and inactivates transcription factor ELK1 (PubMed: [19154138](http://www.uniprot.org/citations/19154138)). Dephosphorylates DARPP32 (PubMed: [19154138](http://www.uniprot.org/citations/19154138)). May dephosphorylate CRTC2 at 'Ser-171' resulting in CRTC2 dissociation from 14-3-3 proteins (PubMed: [30611118](http://www.uniprot.org/citations/30611118)). Dephosphorylates transcription factor TFEB at 'Ser-211' following Coxsackievirus B3 infection, promoting nuclear translocation (PubMed: [33691586](http://www.uniprot.org/citations/33691586)). Required for postnatal development of the nephrogenic zone and superficial glomeruli in the kidneys, cell cycle homeostasis in the nephrogenic zone, and ultimately normal kidney function (By similarity). Plays a role in intracellular AQP2 processing and localization to the apical membrane in the kidney, may thereby be required for efficient kidney filtration (By similarity). Required for secretion of salivary enzymes amylase, peroxidase, lysozyme and sialic acid via formation of secretory vesicles in the submandibular glands (By similarity). Required for calcineurin activity and homosynaptic depotentiation in the hippocampus (By similarity). Required for normal differentiation and survival of keratinocytes and therefore required for epidermis superstructure formation (By similarity). Positively regulates osteoblastic bone formation, via promotion of osteoblast differentiation (By similarity). Positively regulates osteoclast differentiation, potentially via NFATC1 signaling (By similarity). May play a role in skeletal muscle fiber type specification, potentially via NFATC1 signaling (By similarity). Negatively regulates MAP3K14/NIK signaling via inhibition of nuclear translocation of the transcription factors RELA and RELB (By similarity). Required for antigen-specific T- cell proliferation response (By similarity). Dephosphorylates KLHL3, promoting the interaction between KLHL3 and WNK4 and subsequent degradation of WNK4 (PubMed: [30718414](http://www.uniprot.org/citations/30718414)). Negatively regulates SLC9A1 activity (PubMed: [31375679](http://www.uniprot.org/citations/31375679)).

### Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein. Cell membrane, sarcolemma {ECO:0000250|UniProtKB:P63329}. Cytoplasm, myofibril, sarcomere, Z line {ECO:0000250|UniProtKB:P63329}. Cell projection, dendritic spine. Note=Colocalizes with ACTN1 and MYO22 at the Z line in heart and skeletal muscle (By similarity). Recruited to the cell membrane by scaffold protein AKAP5 following L-type  $\text{Ca}^{2+}$ -channel activation (PubMed:22343722) {ECO:0000250|UniProtKB:P63329, ECO:0000269|PubMed:22343722}

### Tissue Location

Expressed in keratinocytes (at protein level) (PubMed:29043977). Expressed in lymphoblasts (at protein level) (PubMed:30254215).

## **Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Protocols**

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

- [Blocking Peptides](#)

## **Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Images**

## **Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - Background**

PPP3CA is a member of the PP2C family of Ser/Thr protein phosphatases. PP2C family members are known to be negative regulators of cell stress response pathways. This phosphatase dephosphorylates, and negatively regulates the activities of, MAP kinases and MAP kinase kinases. It has been shown to inhibit the activation of p38 and JNK kinase cascades induced by environmental stresses. This phosphatase can also dephosphorylate cyclin-dependent kinases, and thus may be involved in cell cycle control. Overexpression of this phosphatase is reported to activate the expression of the tumor suppressor gene TP53/p53, which leads to G2/M cell cycle arrest and apoptosis.

## **Calcineurin (PPP3CA) Antibody (C-term) Blocking peptide - References**

Yoshizaki, T., et al., J. Biol. Chem. 279(21):22715-22726 (2004). Flajolet, M., et al., Proc. Natl. Acad. Sci. U.S.A. 100(26):16006-16011 (2003). Ofek, P., et al., J. Biol. Chem. 278(16):14299-14305 (2003). Matsuda, A., et al., Oncogene 22(21):3307-3318 (2003). Cheng, A., et al., Genes Dev. 13(22):2946-2957 (1999).