

Anti-Calcineurin A Picoband Antibody
Catalog # ABO12073**Specification**

Anti-Calcineurin A Picoband Antibody - Product Information

Application	WB
Primary Accession	Q08209
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform(PPP3CA) detection. Tested with WB in Human.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Calcineurin A Picoband Antibody - Additional Information

Gene ID 5530

Other Names

Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform, 3.1.3.16, CAM-PRP catalytic subunit, Calmodulin-dependent calcineurin A subunit alpha isoform, PPP3CA, CALNA, CNA

Calculated MW

58688 MW KDa

Application Details

Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization

Cell membrane . Cell membrane, sarcolemma . Nucleus . Colocalizes with ACTN1 and MYOZ2 at the Z line in heart and skeletal muscle. .

Protein Name

Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Na₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Calcineurin A (488-521aa DAMPSDANLNSINKALTSETNGTDSNGSNSSNIQ), different from the related mouse and rat sequences by one amino acid.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins.

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the PPP phosphatase family. PP-2B subfamily.

Anti-Calcineurin A Picoband Antibody - 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:[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 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 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 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 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). Negatively regulates SLC9A1 activity (PubMed: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 MYOZ2 at the Z line in heart and skeletal muscle (By similarity). Recruited to the cell membrane by scaffold protein AKAP5 following L-type Ca(2+)-channel activation (PubMed:22343722) {ECO:0000250|UniProtKB:P63329, ECO:0000269|PubMed:22343722}

Tissue Location

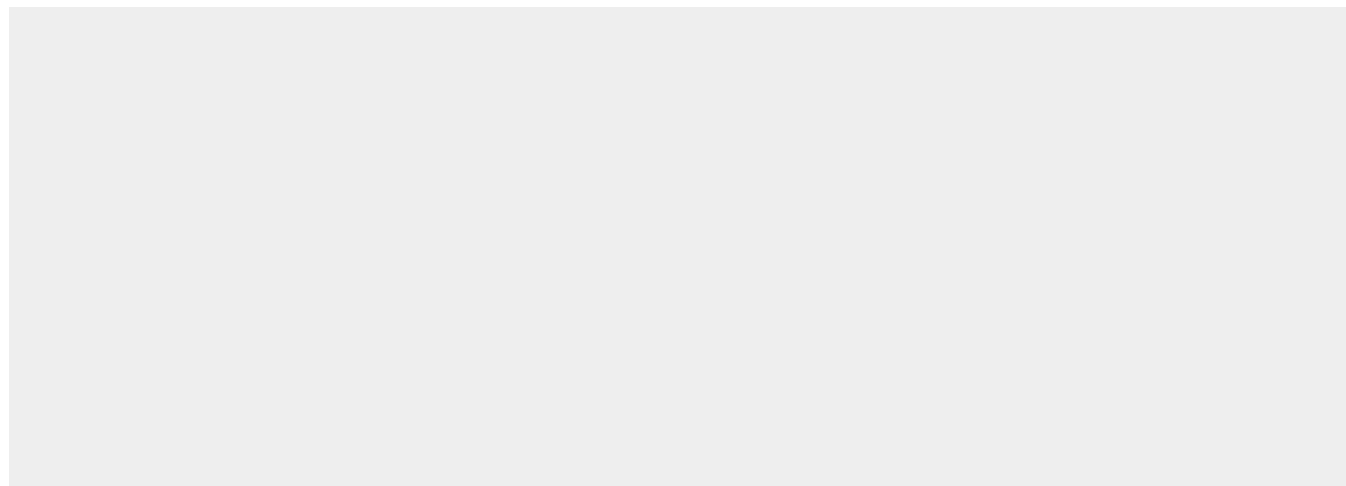
Expressed in keratinocytes (at protein level) (PubMed:29043977). Expressed in lymphoblasts (at protein level) (PubMed:30254215).

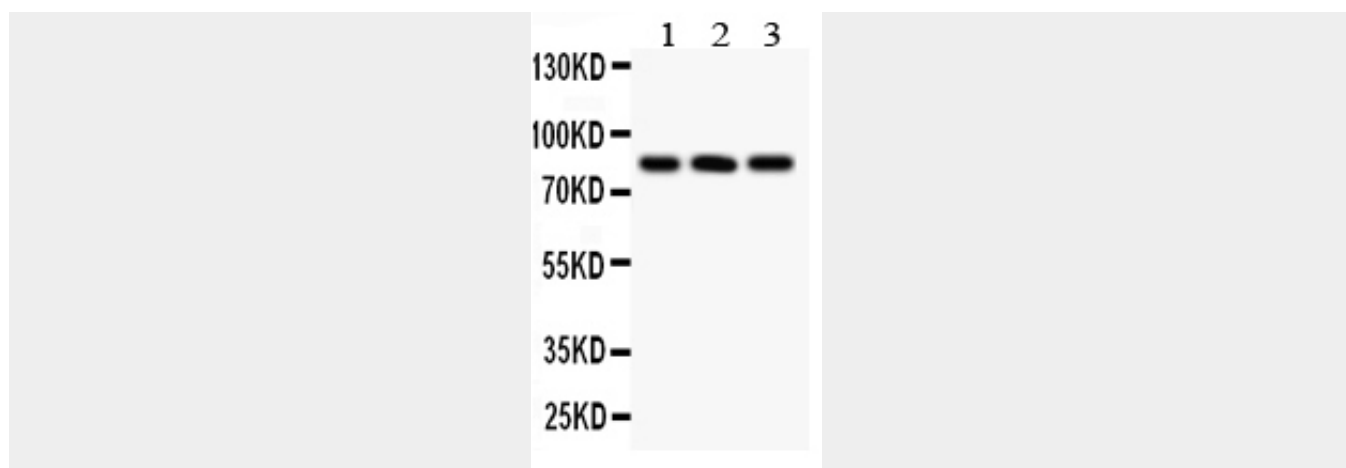
Anti-Calcineurin A Picoband Antibody - Protocols

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](#)

Anti-Calcineurin A Picoband Antibody - Images





Anti- Calcineurin A Picoband antibody, ABO12073, Western blotting All lanes: Anti Calcineurin A (ABO12073) at 0.5ug/ml Lane 1: HELA Whole Cell Lysate at 40ug Lane 2: A549 Whole Cell Lysate at 40ug Lane 3: COLO320 Whole Cell Lysate at 40ug Predicted bind size: 59KD Observed bind size: 84KD

Anti- Calcineurin A Picoband Antibody - Background

Calcineurin A is also known as PPP3CA. It is mapped to 4q24. Semsarian et al. (1999) and Musaro et al. (1999) independently showed that IGF1 stimulates skeletal muscle hypertrophy and a switch to glycolytic metabolism by activating calcineurin A and inducing the nuclear translocation of transcription factor NFATC1. Semsarian et al. (1999) found that hypertrophy was suppressed by the calcineurin inhibitors cyclosporin A or FK506, but not by inhibitors of the MAP kinase or phosphatidylinositol-3-OH kinase pathways. Musaro et al. (1999) showed that expression of a dominant-negative calcineurin mutant also repressed myocyte differentiation and hypertrophy. Musaro et al. (1999) demonstrated that either IGF1 or activated calcineurin induces expression of transcription factor GATA2, which accumulates in a subset of myocyte nuclei, where it associates with calcineurin and a specific dephosphorylated isoform of NFATC1.