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# Anti-Calcineurin A Picoband Antibody

Catalog # ABO12073

## Product Information

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| **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. |

## Additional Information

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| **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 |
| **Application Details** | Western blot, 0.1-0.5 □g/ml, Human |
| **Subcellular Localization** | Cell membrane . Cell membrane, sarcolemma . Nucleus . Colocalizes with ACTN1 and MYOZ2 at the Z line in heart and skeletal muscle. . |
| **Source** | Eukaryota |
| **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 NaN3. |
| **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 r˚Constitution, 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. |

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| **Sequence Similarities** | Belongs to the PPP phosphatase family. PP-2B subfamily. |

## Protein Information

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| **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, PubMed:18838687, PubMed:19154138, PubMed:23468591, PubMed:30254215). Many of the substrates contain a PxIxIT motif and/or a LxVP motif (PubMed:17498738, PubMed:17502104, PubMed:22343722, PubMed:23468591, PubMed:27974827). In response to increased Ca(2+) levels, dephosphorylates and activates phosphatase SSH1 which results in cofilin dephosphorylation (PubMed:15671020). In response to increased Ca(2+) levels following mitochondrial depolarization, dephosphorylates DNM1L inducing DNM1L translocation to the mitochondrion (PubMed: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). In response to increased Ca(2+) levels, regulates NFAT-mediated transcription probably by dephosphorylating NFAT and promoting its nuclear translocation (PubMed:26248042). Dephosphorylates and inactivates transcription factor ELK1 (PubMed:19154138). Dephosphorylates DARPP32 (PubMed:19154138). May dephosphorylate CRTC2 at 'Ser-171' resulting in CRTC2 dissociation from 14-3-3 proteins (PubMed:30611118). Dephosphorylates transcription factor TFEB at 'Ser- 211' following Coxsackievirus B3 infection, promoting nuclear translocation (PubMed: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) |

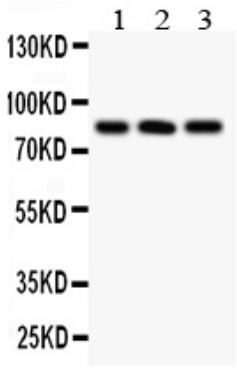
{ECO:0000250|UniProtKB:P63329, ECO:0000269|PubMed:22343722}

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

## 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 IGF1stimulates 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.

## Images




Anti- Calcineurin A Picoband antibody, ABO12073, Western blottingAll lanes: Anti Calcineurin A (ABO12073) at 0.5ug/mlLane 1: HELA Whole Cell Lysate at 40ugLane 2: A549 Whole Cell Lysate at 40ugLane 3: COLO320 Whole Cell Lysate at 40ugPredicted bind size: 59KDObserved bind size: 84KD

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