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KD-Validated Anti-PPP3CA Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1124

Specification

KD-Validated Anti-PPP3CA Rabbit Monoclonal Antibody - Product Information

Application	**WB, ICC**
Primary Accession	Q08209
Reactivity	**Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 59 kDa , observed, 59 kDa KDa**
Gene Name	**PPP3CA**
Aliases	**PPP3CA; Protein Phosphatase 3 Catalytic Subunit Alpha; Calcineurin A Alpha; PPP2B; CALNA; CNA1; CAM-PRP Catalytic Subunit; EC 3.1.3.16; CNA Alpha; CALN; Protein Phosphatase 3 (Formerly 2B), Catalytic Subunit, Alpha Isoform (Calcineurin A Alpha); Serine/Threonine-Protein Phosphatase 2B Catalytic Subunit Alpha Isoform; Protein Phosphatase 3 (Formerly 2B), Catalytic Subunit, Alpha Isoform; Protein Phosphatase 2B, Catalytic Subunit, Alpha Isoform; Calmodulin-Dependent Calcineurin A Subunit Alpha Isoform; Protein Phosphatase 3, Catalytic Subunit, Alpha Isozyme; Protein Phosphatase 3 Catalytic Subunit Alpha Isozyme; ACCIID; CALNA1; IECEE1; DEE91; IECEE; CCN1; CNA**
Immunogen	**A synthesized peptide derived from human Calcineurin A**

KD-Validated Anti-PPP3CA Rabbit Monoclonal Antibody - Additional Information

Gene ID	**5530**

Other Names
Protein phosphatase 3 catalytic subunit alpha {ECO:0000312|HGNC:HGNC:9314}, 3.1.3.16, CAM-PRP catalytic subunit, Calcineurin A alpha, Calmodulin-dependent calcineurin A subunit alpha isoform, PPP3CA (HGNC:9314), CALNA, CNA

KD-Validated Anti-PPP3CA Rabbit Monoclonal 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, 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}

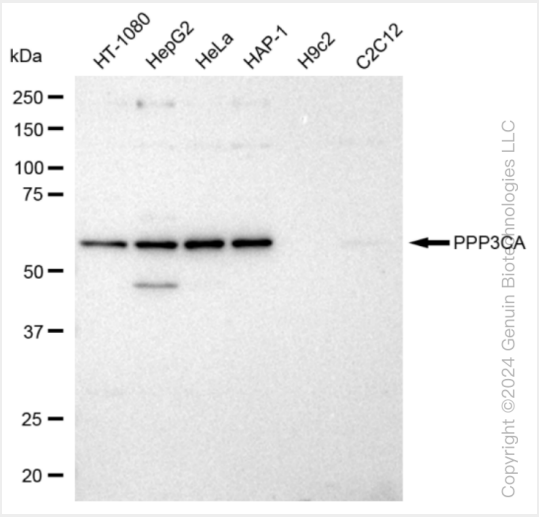
Tissue Location
Expressed in keratinocytes (at protein level) (PubMed:29043977). Expressed in lymphoblasts (at protein level) (PubMed:30254215).

KD-Validated Anti-PPP3CA Rabbit Monoclonal 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 Cytomety
- Cell Culture

KD-Validated Anti-PPP3CA Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-PPP3CA antibody (Cat#AGI1124). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-PPP3CA antibody (Cat#AGI1124, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

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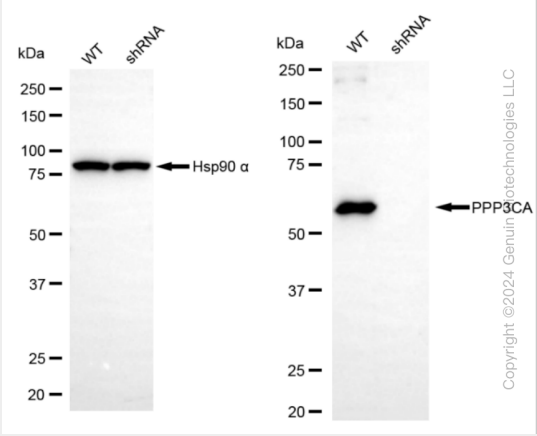
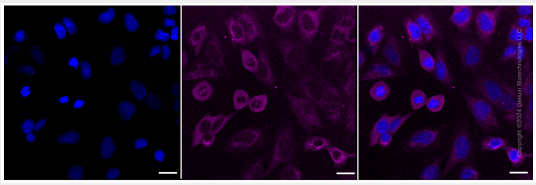


Western blotting analysis using anti-PPP3CA antibody (Cat#AGI1124). PPP3CA expression in wild type (WT) and PPP3CA shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-PPP3CA antibody (Cat#AGI1124, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Immunocytochemical staining of HeLa cells with PPP3CA antibody (Cat#AGI1124, 1:1,000). Nuclei were stained blue with DAPI; PPP3CA was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.