

Anti-PP2A-Alpha Picoband Antibody
Catalog # ABO12038**Specification**

Anti-PP2A-Alpha Picoband Antibody - Product Information

Application	WB, IHC-P
Primary Accession	P67775
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform(PPP2CA) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

Reconstitution

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

Anti-PP2A-Alpha Picoband Antibody - Additional Information

Gene ID 5515

Other Names

Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform, PP2A-alpha, 3.1.3.16, Replication protein C, RP-C, PPP2CA

Calculated MW

35594 MW KDa

Application Details

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

Subcellular Localization

Cytoplasm . Nucleus . Chromosome, centromere . Cytoplasm, cytoskeleton, spindle pole . In prometaphase cells, but not in anaphase cells, localizes at centromeres. During mitosis, also found at spindle poles. Centromeric localization requires the presence of SGOL2 (By similarity). .

Protein Name

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

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg NaN₃.

Immunogen

E.coli-derived human PP2A-alpha recombinant protein (Position: M1-L309). Human PP2A-alpha shares 100% amino acid (aa) sequence identity with both mouse and rat PP2A-alpha.

Purification

Immunogen affinity purified.

Cross Reactivity

PP2A-alpha shares 100% cross reactivity with PPP2CB.

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.

Anti-PP2A-Alpha Picoband Antibody - Protein Information

Name PPP2CA

Function

Catalytic subunit of protein phosphatase 2A (PP2A), a serine/threonine phosphatase involved in the regulation of a wide variety of enzymes, signal transduction pathways, and cellular events (PubMed:10801873, PubMed:12473674, PubMed:17245430, PubMed:22613722, PubMed:33243860, PubMed:34004147, PubMed:9920888). PP2A is the major phosphatase for microtubule-associated proteins (MAPs) (PubMed:22613722). PP2A can modulate the activity of phosphorylase B kinase casein kinase 2, mitogen-stimulated S6 kinase, and MAP-2 kinase (PubMed:22613722). Cooperates with SGO2 to protect centromeric cohesin from separase-mediated cleavage in oocytes specifically during meiosis I (By similarity). Can dephosphorylate various proteins, such as SV40 large T antigen, AXIN1, p53/TP53, PIM3, WEE1 (PubMed:10801873, PubMed:12473674, PubMed:17245430, PubMed:9920888). Activates RAF1 by dephosphorylating it at 'Ser-259' (PubMed:10801873). Mediates dephosphorylation of WEE1, preventing its ubiquitin-mediated proteolysis, increasing WEE1 protein levels, and promoting the G2/M checkpoint (PubMed:33108758). Mediates dephosphorylation of MYC; promoting its ubiquitin-mediated proteolysis: interaction with AMBRA1 enhances interaction between PPP2CA and MYC (PubMed:25438055). Mediates dephosphorylation of FOXO3; promoting its stabilization: interaction with AMBRA1 enhances interaction between PPP2CA and FOXO3 (PubMed:30513302). Catalyzes dephosphorylation of the pyrin domain of NLRP3, promoting assembly of the NLRP3 inflammasome (By similarity). Together with RACK1 adapter, mediates dephosphorylation of AKT1 at 'Ser-473', preventing AKT1 activation and AKT-mTOR signaling pathway (By similarity). Dephosphorylation of AKT1 is essential for regulatory T-cells (Treg) homeostasis and stability (By similarity). Catalyzes dephosphorylation of PIM3, promotinh PIM3 ubiquitination and proteasomal degradation (PubMed:12473674). Part of the striatin- interacting phosphatase and kinase (STRIPAK) complexes (PubMed:33633399). STRIPAK complexes have critical roles in protein (de)phosphorylation and are regulators of multiple

signaling pathways including Hippo, MAPK, nuclear receptor and cytoskeleton remodeling (PubMed:33633399). Different types of STRIPAK complexes are involved in a variety of biological processes such as cell growth, differentiation, apoptosis, metabolism and immune regulation (PubMed:33633399). Key mediator of a quality checkpoint during transcription elongation as part of the Integrator-PP2A (INTAC) complex (PubMed:33243860, PubMed:34004147, PubMed:37080207). The INTAC complex drives premature transcription termination of transcripts that are unfavorably configured for transcriptional elongation: within the INTAC complex, PPP2CA catalyzes dephosphorylation of the C-terminal domain (CTD) of Pol II subunit POLR2A/RPB1 and SUPT5H/SPT5, thereby preventing transcriptional elongation (PubMed:33243860, PubMed:34004147, PubMed:37080207).

Cellular Location

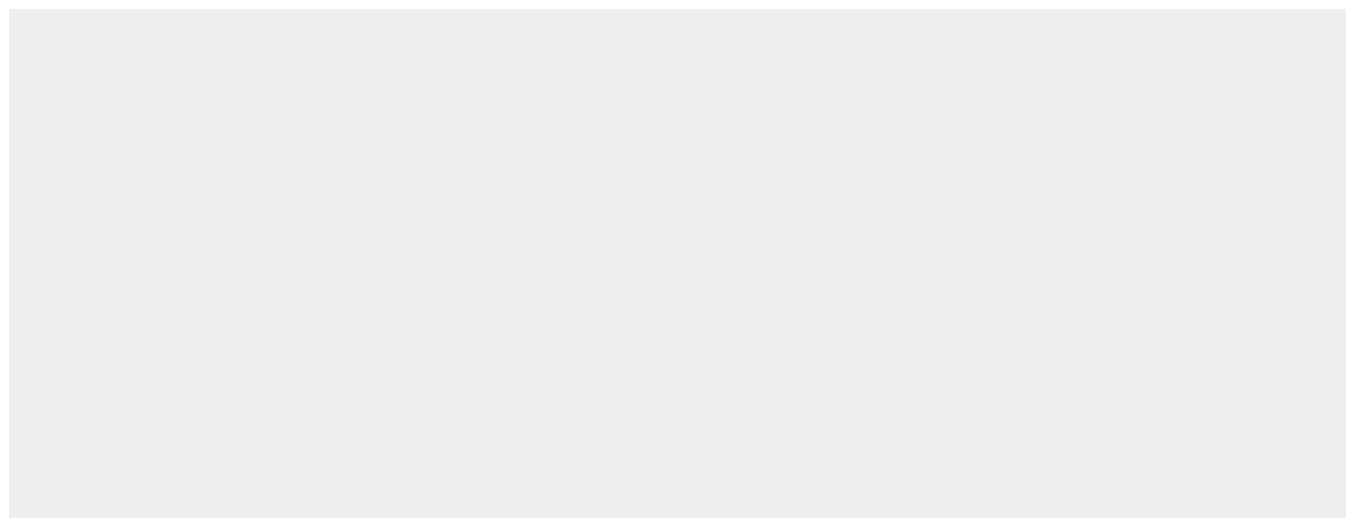
Cytoplasm. Nucleus. Chromosome. Chromosome, centromere. Cytoplasm, cytoskeleton, spindle pole. Note=In prometaphase cells, but not in anaphase cells, localizes at centromeres (PubMed:16541025). During mitosis, also found at spindle poles (PubMed:16541025). Centromeric localization requires the presence of SGO2 (By similarity). Recruited to chromatin and transcription pause-release checkpoint via its association with the Integrator complex (PubMed:33243860, PubMed:34004147). {ECO:0000250|UniProtKB:P63330, ECO:0000269|PubMed:16541025, ECO:0000269|PubMed:33243860, ECO:0000269|PubMed:34004147}

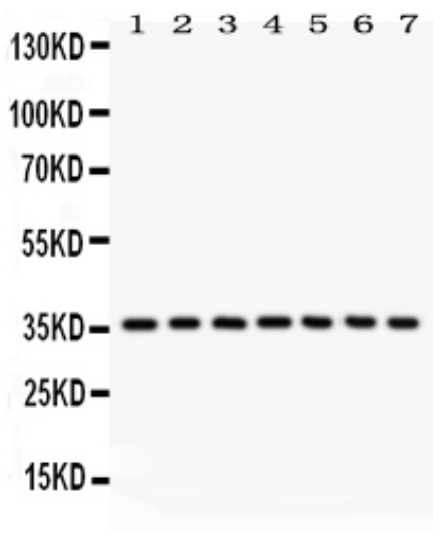
Anti-PP2A-Alpha Picoband Antibody - Protocols

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

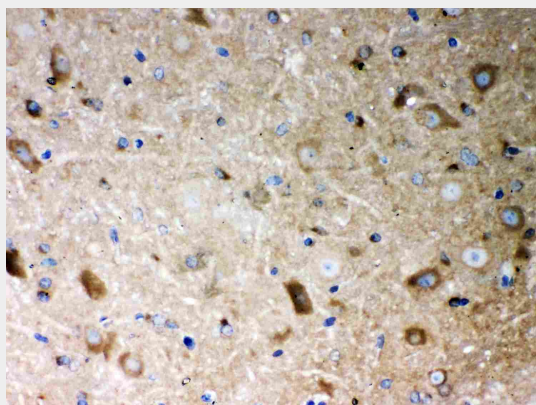
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-PP2A-Alpha Picoband Antibody - Images

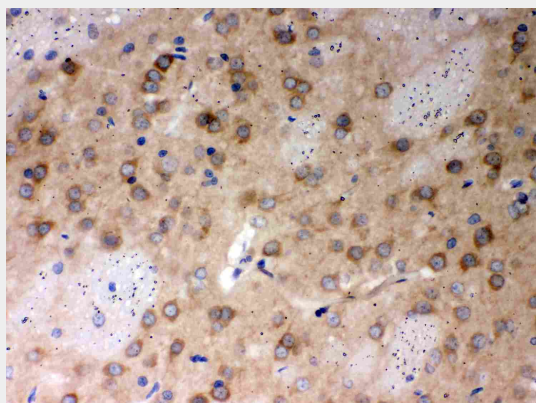




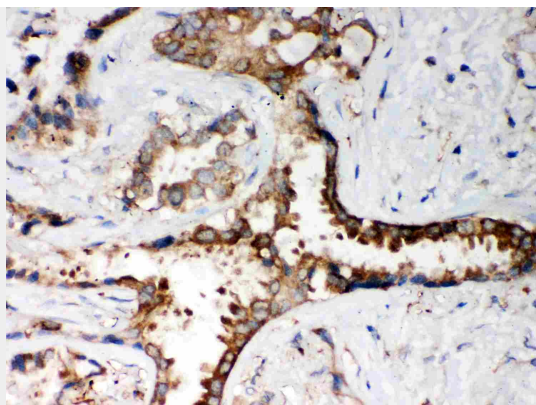
Anti- PP2A-alpha Picoband antibody, ABO12038, Western blottingAll lanes: Anti PP2A-alpha (ABO12038) at 0.5ug/mlLane 1: Rat Kidney Tissue Lysate at 50ugLane 2: Mouse Kidney Tissue Lysate at 50ugLane 3: Human Placenta Tissue Lysate at 50ugLane 4: Rat Liver Tissue Lysate at 50ugLane 5: NIH Whole Cell Lysate at 40ugLane 6: PC-12 Whole Cell Lysate at 40ugLane 7: 293T Whole Cell Lysate at 40ugPredicted bind size: 36KDObserved bind size: 36KD



Anti- PP2A-alpha Picoband antibody, ABO12038, IHC(P)IHC(P): Mouse Brain Tissue



Anti- PP2A-alpha Picoband antibody, ABO12038, IHC(P)IHC(P): Rat Brain Tissue



Anti- PP2A-alpha Picoband antibody, ABO12038, IHC(P)IHC(P): Human Lung Cancer Tissue

Anti-PP2A-Alpha Picoband Antibody - Background

The catalytic subunit of human protein phosphatase 2A (PPP2CA) encodes a 309-amino acid polypeptide. It is localized to chromosome 5. The gene (approximately 30 kbp) is composed of seven exons and six introns. It is predicted to be important for phosphatase enzymatic activity. Methylation of the C-terminal leucine residue (Leu309) of protein serine/threonine phosphatase 2A catalytic subunit (PP2AC) is known to regulate catalytic activity in vitro. Furthermore, PP2A has a fundamental role in cardiac function, and suggests that disturbances in protein phosphatase expression and activity may cause or exacerbate the course of cardiac diseases.