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PP1C gamma (PPP1CC) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8432b

Product Information

Application	WB, E
Primary Accession	P36873
Other Accession	P63088, P63087, P61287
Reactivity	Human
Predicted	Bovine, Mouse, Rat, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB5941
Calculated MW	36984
Antigen Region	291-321

Additional Information

Gene ID	5501
Other Names	Serine/threonine-protein phosphatase PP1-gamma catalytic subunit, PP-1G, Protein phosphatase 1C catalytic subunit, PPP1CC
Target/Specificity	This PP1C gamma (PPP1CC) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 291-321 amino acids from the C-terminal region of human PP1C gamma (PPP1CC).
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PP1C gamma (PPP1CC) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PPP1CC
Function	Protein phosphatase that associates with over 200 regulatory proteins to form highly specific holoenzymes which dephosphorylate hundreds of

biological targets (PubMed:17936702, PubMed:25012651). Protein phosphatase 1 (PP1) is essential for cell division, and participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis. Dephosphorylates RPS6KB1 (PubMed:17936702). Involved in regulation of ionic conductances and long-term synaptic plasticity. May play an important role in dephosphorylating substrates such as the postsynaptic density-associated Ca(2+)/calmodulin dependent protein kinase II. Component of the PTW/PP1 phosphatase complex, which plays a role in the control of chromatin structure and cell cycle progression during the transition from mitosis into interphase (PubMed:20516061). In balance with CSNK1D and CSNK1E, determines the circadian period length, through the regulation of the speed and rhythmicity of PER1 and PER2 phosphorylation (PubMed:21712997). May dephosphorylate CSNK1D and CSNK1E (By similarity). Regulates the recruitment of the SKA complex to kinetochores (PubMed:28982702). Dephosphorylates the 'Ser-418' residue of FOXP3 in regulatory T-cells (Treg) from patients with rheumatoid arthritis, thereby inactivating FOXP3 and rendering Treg cells functionally defective (PubMed:23396208). Together with PPP1CA (PP1- alpha subunit), dephosphorylates IFIH1/MDA5 and RIG-I leading to their activation and a functional innate immune response (PubMed:23499489). Core component of the SHOC2-MRAS-PP1c (SMP) holophosphatase complex that regulates the MAPK pathway activation (PubMed:35768504, PubMed:35831509). The SMP complex specifically dephosphorylates the inhibitory phosphorylation at 'Ser-259' of RAF1 kinase, 'Ser-365' of BRAF kinase and 'Ser-214' of ARAF kinase, stimulating their kinase activities (PubMed:35768504, PubMed:35831509). Dephosphorylates MKI67 at the onset of anaphase (PubMed:25012651). The SMP complex enhances the dephosphorylation activity and substrate specificity of PP1c (PubMed:35768504, PubMed:35831509).

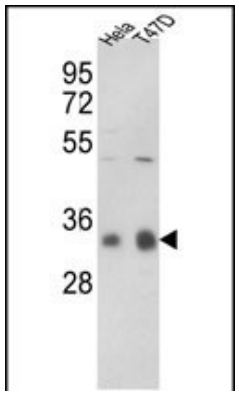
Cellular Location

Cytoplasm. Nucleus. Nucleus, nucleolus. Nucleus, nucleoplasm. Nucleus speckle. Chromosome, centromere, kinetochore. Cleavage furrow. Midbody Mitochondrion. Cytoplasm, cytoskeleton, microtubule organizing center Note=Colocalizes with SPZ1 in the nucleus (By similarity). Colocalizes with URI1 at mitochondrion (PubMed:17936702). Rapidly exchanges between the nucleolar, nucleoplasmic and cytoplasmic compartments (PubMed:11739654). Highly mobile in cells and can be relocalized through interaction with targeting subunits (PubMed:17965019). In the presence of PPP1R8 relocalizes from the nucleolus to nuclear speckles (PubMed:11739654). Shows a dynamic targeting to specific sites throughout the cell cycle (PubMed:12529430). Highly concentrated in nucleoli of interphase cells and localizes at kinetochores early in mitosis (PubMed:12529430). Relocalization to chromosome-containing regions occurs at the transition from early to late anaphase (PubMed:12529430). Also accumulates at the cleavage furrow and midbody by telophase (PubMed:12529430). Colocalizes with DYNLT4 in the microtubule organizing center (MTOC) (PubMed:23789093) {ECO:0000250|UniProtKB:P63087, ECO:0000269|PubMed:11739654, ECO:0000269|PubMed:12529430, ECO:0000269|PubMed:17936702, ECO:0000269|PubMed:17965019, ECO:0000269|PubMed:23789093}

Background

Protein phosphatase-1 (PP1) is 1 of 4 major serine/threonine-specific protein phosphatases involved in the dephosphorylation of a variety of proteins. These enzymes work in opposition to the protein kinases to control the level of phosphorylation. Protein phosphatase (PP1) is essential for cell division, and it participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis, as well as in regulation of ionic conductances and long-term synaptic plasticity. PP1 has 3 catalytic subunits, designated alpha (PPP1CA), beta (PPP1CB), and gamma (PPP1CC).

Images



Western blot analysis of hPPP1CC-A306 (Cat. #AP8432b) in Hela, T47D cell line lysates (35ug/lane).PPP1CC (arrow) was detected using the purified Pab.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.