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PP1C Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52703

Product Information

Application	WB
Primary Accession	P36873
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Calculated MW	36984

Additional Information

Gene ID	5501
Other Names	EC 3.1.3.16;PP 1G;PP-1G;PP1G;PP1G_HUMAN;PP1gamma;PPP 1G;PPP1CC;PPP1CC protein;PPP1G; Protein phosphatase 1 catalytic subunit gamma isoform;Protein phosphatase 1C catalytic subunit;Protein phosphatase 1C subunit;Protein phosphatase 2C gamma isoform; Serine/threonine phosphatase 1 gamma;Serine/threonine protein phosphatase PP1 gamma catalytic subunit;Serine/threonine-protein phosphatase PP1-gamma catalytic subunit.
Dilution	WB~~1:500
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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

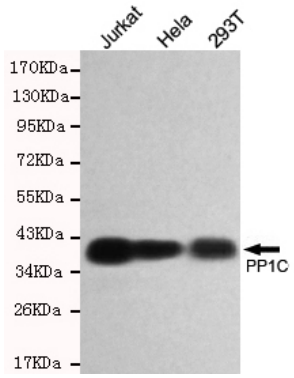
Protein phosphatase that associates with over 200 regulatory proteins to form highly specific holoenzymes which dephosphorylate hundreds of biological targets. Protein phosphatase 1 (PP1) is essential for cell division, and participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis. Dephosphorylates RPS6KB1. 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. In balance with CSNK1D and CSNK1E, determines the circadian period length, through the regulation of the speed and rhythmicity of PER1 and PER2 phosphorylation. May dephosphorylate CSNK1D and CSNK1E.

References

Barker H.M.,et al.Biochim. Biophys. Acta 1178:228-233(1993).
Bienvenut W.V.,et al.Submitted (MAR-2009) to UniProtKB.

Bienvenut W.V.,et al.Submitted (JAN-2010) to UniProtKB.
Norman S.A.,et al.Mamm. Genome 5:41-45(1994).
MacKintosh R.W.,et al.FEBS Lett. 371:236-240(1995).

Images



Western blot detection of PP1C in Hela,293T and Jurkat cell lysates using PP1C mouse mAb (1:500 diluted).Predicted band size:38KDa.Observed band size:38KDa.

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