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PP1C gamma Rabbit pAb

Catalog # AP97154

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P36873
Other Accession	P36873
Reactivity	Rat, Mouse
Predicted	Human, Chicken, Dog, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36984
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human PP1G
Epitope Specificity	251-323/323
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the PPP phosphatase family. PP-1 subfamily.
SUBUNIT	PP1 comprises a catalytic subunit, PPP1CA, PPP1CB or PPP1CC, which is folded into its native form by inhibitor 2 and glycogen synthetase kinase 3, and then complexed to one or several targeting or regulatory subunits. PPP1R12A, PPP1R12B and PPP1R12C mediate binding to myosin. PPP1R3A (in skeletal muscle), PPP1R3B (in liver), PPP1R3C, PPP1R3D and PPP1R3F (in brain) mediate binding to glycogen. Interacts with cyanobacterial toxin microcystin; disulfide-linked. Interacts with PPP1R3B and PPP1R7. Isoform gamma-2 interacts with SPZ1 (By similarity). Component of the MLL5-L complex, at least composed of MLL5, STK38, PPP1CA, PPP1CB, PPP1CC, HCFC1, ACTB and OGT. Interacts with CDCA2. PPP1R15A and PPP1R15B mediate binding to EIF2S1. Part of a complex containing PPP1R15B, PP1 and NCK1/2. Interacts with IKFZ1; the interaction targets PPP1CC to pericentromeric heterochromatin, dephosphorylates IKAROS, stabilizes it and prevents it from degradation. Interacts with PPP1R42; the interaction is direct (By similarity). Interacts with NOM1 and PPP1R8. Component of the PTW/PP1 phosphatase complex, composed of PPP1R10/PNUTS, TOX4, WDR82, and PPP1CA or PPP1CB or PPP1CC. Interacts with PPP1R8. Interacts with isoform 1 and isoform 4 NEK2. Interacts with URI1; the interaction is phosphorylation-dependent and occurs in a growth factor-dependent manner.
Post-translational modifications	Phosphorylated by NEK2.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Protein phosphatase 1 (PP1) is essential for cell division, and participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis. The protein is involved in regulation of ionic conductances and long term synaptic plasticity. It may play an important role in dephosphorylating substrates such as the postsynaptic density associated Ca (2+)/calmodulin

dependent protein kinase II. PP1 comprises a catalytic subunit, PPP1CA, PPP1CB or PPP1CC (PP1C gamma), which is folded into its native form by inhibitor 2 and glycogen synthetase kinase 3, and then complexed to one or several targeting or regulatory subunits. PPP1R12A and PPP1R12B mediate binding to myosin. PPP1R3A, PPP1R3B, PPP1R3C and PPP1R3D mediate binding to glycogen.

Additional Information

Gene ID	5501
Other Names	PP-1G; PP1C; PPP1G; PP1; dis2m1; Ppp1cc1; PP1G_BOVIN; PPP1CC; Protein phosphatase 1C catalytic subunit; 3.1.3.16; PP1G_HUMAN; PP1G_MOUSE; PP1G_RAT; protein phosphatase 1 catalytic subunit gamma; protein phosphatase 1, catalytic subunit, gamma isoform; protein phosphatase 1, catalytic subunit, gamma isozyme
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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}

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