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PPP1CB Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1939a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	P62140
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	8A7C7
Isotype	IgG1
Calculated MW	37187
Description	The protein encoded by this gene is one of the three catalytic subunits of protein phosphatase 1 (PP1). PP1 is a serine/threonine specific protein phosphatase known to be involved in the regulation of a variety of cellular processes, such as cell division, glycogen metabolism, muscle contractility, protein synthesis, and HIV-1 viral transcription. Mouse studies suggest that PP1 functions as a suppressor of learning and memory. Two alternatively spliced transcript variants encoding distinct isoforms have been observed
Immunogen	Purified recombinant fragment of human PPP1CB (AA: 174-327) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide.

Additional Information

Gene ID	5500
Other Names	Serine/threonine-protein phosphatase PP1-beta catalytic subunit, PP-1B, PPP1CD, 3.1.3.16, 3.1.3.53, PPP1CB
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PPP1CB Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PPP1CB

Function	Protein phosphatase that associates with over 200 regulatory proteins to form highly specific holoenzymes which dephosphorylate hundreds of biological targets. Protein phosphatase (PP1) is essential for cell division, it participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis. Involved in regulation of ionic conductances and long-term synaptic plasticity. 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. 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). Core component of the SHOC2-MRAS-PP1c (SMP) holophosphatase complex that regulates the MAPK pathway activation (PubMed:35768504, PubMed:35831509, PubMed:36175670). 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, PubMed:36175670). The SMP complex enhances the dephosphorylation activity and substrate specificity of PP1c (PubMed:35768504, PubMed:36175670).
Cellular Location	Cytoplasm. Nucleus. Nucleus, nucleoplasm. Nucleus, nucleolus. Note=Highly mobile in cells and can be relocalized through interaction with targeting subunits. In the presence of PPP1R8 relocalizes from the nucleus to nuclear speckles.

Background

This gene belongs to the forkhead family of transcription factors which is characterized by a distinct DNA-binding forkhead domain. The specific function of this gene has not yet been determined; however, it may play a role in the development of mesenchymal tissues. ; ;

References

1. J Biol Chem. 2011 Sep 23;286(38):32931-6.2. Mol Biol Cell. 2010 Dec;21(24):4409-17.

Images

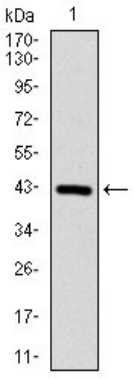
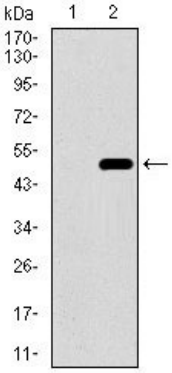


Figure 1: Western blot analysis using PPP1CB mAb against human PPP1CB (AA: 174-327) recombinant protein. (Expected MW is 43.2 kDa)

Figure 2: Western blot analysis using PPP1CB mAb against HEK293 (1) and PPP1CB (AA: 174-327)-hIgGFc transfected HEK293 (2) cell lysate.



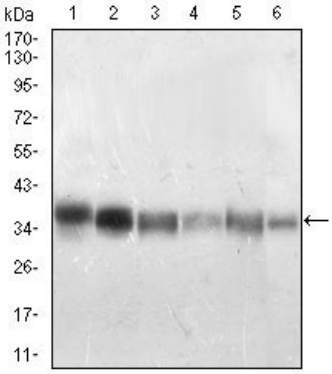


Figure 3: Western blot analysis using PPP1CB mouse mAb against Jurkat (1), A431 (2), Hela (3), HepG2 (4), HEK293 (5), MCF-7 (6) cell lysate.

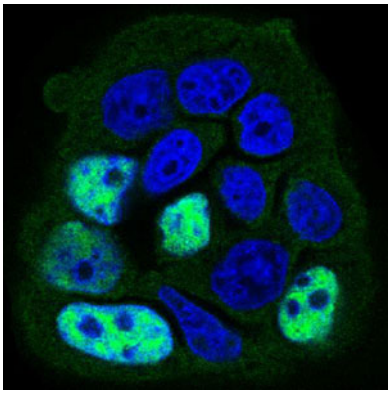


Figure 4: Immunofluorescence analysis of MCF-7 cells using PPP1CB mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Secondary antibody from Fisher (Cat#: 35503)

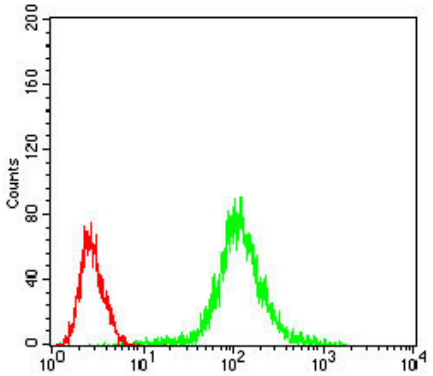


Figure 5: Flow cytometric analysis of Jurkat cells using PPP1CB mouse mAb (green) and negative control (red).

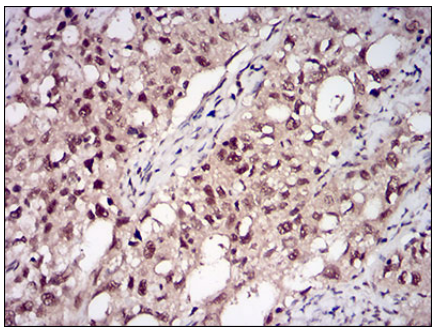


Figure 6: Immunohistochemical analysis of paraffin-embedded cervical cancer tissues using PPP1CB mouse mAb with DAB staining.