

**PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3)**  
**Mouse Monoclonal Antibody**  
**Catalog # ALS12560****Specification**

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**PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - Product Information**

Application	IHC, WB
Primary Accession	<a href="#">P62136</a>
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	38kDa KDa

**PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - Additional Information****Gene ID** 5499**Other Names**

Serine/threonine-protein phosphatase PP1-alpha catalytic subunit, PP-1A, 3.1.3.16, PPP1CA, PPP1A

**Reconstitution & Storage**

Long term: -20°C; Short term: +4°C; Avoid freeze-thaw cycles.

**Precautions**

PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) is for research use only and not for use in diagnostic or therapeutic procedures.

**PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - Protein Information****Name** PPP1CA**Synonyms** PPP1A**Function**

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. 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. Regulates NEK2 function in terms of kinase activity and centrosome number and splitting, both in the presence and absence of radiation- induced DNA damage. Regulator of neural tube and optic fissure closure, and enteric neural crest cell (ENCCs) migration during development. 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:<a href="http://www.uniprot.org/citations/23396208" target="\_blank">23396208</a>). Dephosphorylates CENPA (PubMed:<a href="http://www.uniprot.org/citations/25556658" target="\_blank">25556658</a>). Dephosphorylates the 'Ser-139' residue of ATG16L1 causing dissociation of ATG12-ATG5-ATG16L1 complex, thereby inhibiting autophagy (PubMed:<a href="http://www.uniprot.org/citations/26083323" target="\_blank">26083323</a>).

#### **Cellular Location**

Cytoplasm. Nucleus. Nucleoplasm. Nucleus, nucleolus Note=Primarily nuclear and largely excluded from the nucleolus. Highly mobile in cells and can be relocalized through interaction with targeting subunits. NOM1 plays a role in targeting this protein to the nucleolus. In the presence of PPP1R8 relocalizes from the nucleus to nuclear speckles. Shuttles toward the cytosol during infection with VEEV (PubMed:29769351).

#### **Volume**

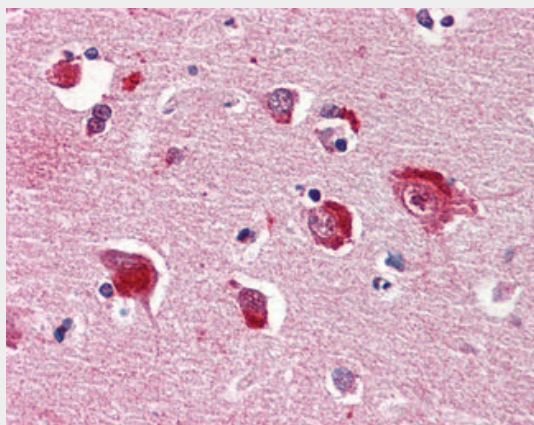
50 µl

#### **PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - Protocols**

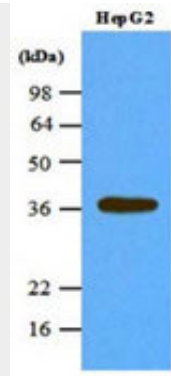
Provided below are standard protocols that you may find useful for product applications.

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

#### **PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - Images**



Anti-PPP1CA antibody IHC of human brain, cortex.



Cell lysates of HepG2 (45 ug) were resolved by SDS-PAGE, transferred to NC membrane and probed...

#### **PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - 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. 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. Regulates NEK2 function in terms of kinase activity and centrosome number and splitting, both in the presence and absence of radiation-induced DNA damage. Regulator of neural tube and optic fissure closure, and enteric neural crest cell (ENCCs) migration during development. 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.

#### **PPP1CA / PP1-Alpha Antibody (aa30-299, clone 4G3) - References**

- Song Q.,et al.Gene 129:291-295(1993).
- Durfee T.,et al.Genes Dev. 7:555-569(1993).
- Tung L.,et al.Submitted (APR-1991) to the EMBL/GenBank/DDBJ databases.
- Ota T.,et al.Nat. Genet. 36:40-45(2004).
- Kalnine N.,et al.Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.