

# PPP2CA (pY307) Antibody

Purified Rabbit Polyclonal Antibody (Pab)  
Catalog # AP51629

## Product Information

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<b>Application</b>	WB
<b>Primary Accession</b>	<a href="#">P67775</a>
<b>Reactivity</b>	Human, Mouse, Rat
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Calculated MW</b>	35594

## Additional Information

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<b>Gene ID</b>	5515
<b>Other Names</b>	Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform, PP2A-alpha, Replication protein C, RP-C, PPP2CA
<b>Target/Specificity</b>	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human PPP2CA. The exact sequence is proprietary.
<b>Dilution</b>	WB~~1:1000
<b>Format</b>	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
<b>Storage</b>	Store at -20 °C. Stable for 12 months from date of receipt

## Protein Information

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<b>Name</b>	PPP2CA
<b>Function</b>	Catalytic subunit of protein phosphatase 2A (PP2A), a serine/threonine phosphatase involved in the regulation of a wide variety of enzymes, signal transduction pathways, and cellular events (PubMed: <a href="#">10801873</a> , PubMed: <a href="#">12473674</a> , PubMed: <a href="#">17245430</a> , PubMed: <a href="#">22613722</a> , PubMed: <a href="#">33243860</a> , PubMed: <a href="#">34004147</a> , PubMed: <a href="#">9920888</a> ). PP2A is the major phosphatase for microtubule-associated proteins (MAPs) (PubMed: <a href="#">22613722</a> ). PP2A can modulate the activity of phosphorylase B kinase casein kinase 2, mitogen-stimulated S6 kinase, and MAP-2 kinase (PubMed: <a href="#">22613722</a> ). Cooperates with SGO2 to protect centromeric cohesin from separase-mediated cleavage in oocytes specifically during meiosis I (By similarity). Can dephosphorylate various proteins, such as SV40 large T antigen, AXIN1, p53/TP53, PIM3, WEE1 (PubMed: <a href="#">10801873</a> , PubMed: <a href="#">12473674</a> , PubMed: <a href="#">17245430</a> , PubMed: <a href="#">9920888</a> ). Activates RAF1 by dephosphorylating it at 'Ser-259' (PubMed: <a href="#">10801873</a> ). Mediates dephosphorylation of WEE1, preventing its ubiquitin-mediated proteolysis,

increasing WEE1 protein levels, and promoting the G2/M checkpoint (PubMed:[33108758](#)). Mediates dephosphorylation of MYC; promoting its ubiquitin-mediated proteolysis: interaction with AMBRA1 enhances interaction between PPP2CA and MYC (PubMed:[25438055](#)). Mediates dephosphorylation of FOXO3; promoting its stabilization: interaction with AMBRA1 enhances interaction between PPP2CA and FOXO3 (PubMed:[30513302](#)). Catalyzes dephosphorylation of the pyrin domain of NLRP3, promoting assembly of the NLRP3 inflammasome (By similarity). Together with RACK1 adapter, mediates dephosphorylation of AKT1 at 'Ser-473', preventing AKT1 activation and AKT-mTOR signaling pathway (By similarity). Dephosphorylation of AKT1 is essential for regulatory T-cells (Treg) homeostasis and stability (By similarity). Catalyzes dephosphorylation of PIM3, promoting PIM3 ubiquitination and proteasomal degradation (PubMed:[12473674](#)). Part of the striatin- interacting phosphatase and kinase (STRIPAK) complexes (PubMed:[33633399](#)). STRIPAK complexes have critical roles in protein (de)phosphorylation and are regulators of multiple signaling pathways including Hippo, MAPK, nuclear receptor and cytoskeleton remodeling (PubMed:[33633399](#)). Different types of STRIPAK complexes are involved in a variety of biological processes such as cell growth, differentiation, apoptosis, metabolism and immune regulation (PubMed:[33633399](#)). Key mediator of a quality checkpoint during transcription elongation as part of the Integrator-PP2A (INTAC) complex (PubMed:[33243860](#), PubMed:[34004147](#), PubMed:[37080207](#)). The INTAC complex drives premature transcription termination of transcripts that are unfavorably configured for transcriptional elongation: within the INTAC complex, PPP2CA catalyzes dephosphorylation of the C-terminal domain (CTD) of Pol II subunit POLR2A/RPB1 and SUPT5H/SPT5, thereby preventing transcriptional elongation (PubMed:[33243860](#), PubMed:[34004147](#), PubMed:[37080207](#)).

## Cellular Location

Cytoplasm. Nucleus. Chromosome. Chromosome, centromere. Cytoplasm, cytoskeleton, spindle pole. Note=In prometaphase cells, but not in anaphase cells, localizes at centromeres (PubMed:16541025). During mitosis, also found at spindle poles (PubMed:16541025). Centromeric localization requires the presence of SGO2 (By similarity). Recruited to chromatin and transcription pause-release checkpoint via its association with the Integrator complex (PubMed:33243860, PubMed:34004147). {ECO:0000250 | UniProtKB:P63330, ECO:0000269 | PubMed:16541025, ECO:0000269 | PubMed:33243860, ECO:0000269 | PubMed:34004147}

## Background

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PP2A is the major phosphatase for microtubule-associated proteins (MAPs). PP2A can modulate the activity of phosphorylase B kinase casein kinase 2, mitogen-stimulated S6 kinase, and MAP-2 kinase. Cooperates with SGOL2 to protect centromeric cohesin from separase-mediated cleavage in oocytes specifically during meiosis I (By similarity). Can dephosphorylate SV40 large T antigen and p53/TP53. Activates RAF1 by dephosphorylating it at 'Ser-259'.

## References

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