

Recombinant Rat PP2AA Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52415

Size: 10ug, 100ug

Protein Name: Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform (PP2A-alpha) (EC 3.1.3.16)

Synonym: Ppp2ca

UniProt ID: P63331

UniProt Link: www.uniprot.org/uniprotkb/P63331/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 309 AA

Molecular Weight: 36 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDEKLFTKELDQWIEQLNECKQLSESQVKSLCEKAKEILTKESNVQEVRCPTVCGDVHGGQFHDLME
ELFRIGGKSPDTNYLFMGDYVDRGYYSVETVTLLVALKVRYRERITILRGNHESRQITQVYGFYDECL
RKYGNANVWKYFTDLFDYLPLTALVDGQIFCLHGGLSPSIDTLDIRALDRLQEVPHGPMCDLLWS
DPDDRGGWGISPRGAGYTFGQDISETFNHANGTLVSRHQLVMEGYNWCHDRNVVTIFSAPNYC
YRCGNQAAIMELDDTLKYSFLQFDPAPRRGEPHVTRRTPDYFL

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions



Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform (PP2A-alpha) (EC 3.1.3.16) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: 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. 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 (By similarity). 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 AXIN1, p53/TP53, PIM3, WEE1. Activates RAF1 by dephosphorylating it at 'Ser-259'. Mediates dephosphorylation of WEE1, preventing its ubiquitin-mediated proteolysis, increasing WEE1 protein levels, and promoting the G2/M checkpoint. Mediates dephosphorylation of MYC; promoting its ubiquitin-mediated proteolysis: interaction with AMBRA1 enhances interaction between PPP2CA and MYC. Mediates dephosphorylation of FOXO3; promoting its stabilization: interaction with AMBRA1 enhances interaction between PPP2CA and FOXO3 (By similarity). Catalyzes dephosphorylation of the pyrin domain of NLRP3, promoting assembly of the NLRP3 inflammasome. Together with RACK1 adapter, mediates dephosphorylation of AKT1 at 'Ser-473', preventing AKT1 activation and AKT-mTOR signaling pathway. 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. Part of the striatin-interacting phosphatase and kinase (STRIPAK) complexes. STRIPAK complexes have critical roles in protein (de)phosphorylation and are regulators of multiple signaling pathways including Hippo, MAPK, nuclear receptor and cytoskeleton remodeling. Different types of STRIPAK complexes are involved in a variety of biological processes such as cell growth, differentiation, apoptosis, metabolism and immune regulation. Key mediator of a quality checkpoint during transcription elongation as part of the Integrator-PP2A (INTAC) complex. 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 (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Chromosome . Chromosome, centromere . Cytoplasm, cytoskeleton, spindle pole . Note=In prometaphase cells, but not in anaphase cells, localizes at centromeres. During mitosis, also found at spindle poles (By similarity). Centromeric localization requires the presence of SGO2 (By similarity). Recruited to chromatin and transcription pause-release checkpoint via its association with the Integrator complex (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.