



Recombinant Mouse Pyridoxal phosphate phosphatase (Pdpx)

Product Code	CSB-YP017749MO
Relevance	Protein serine phosphatase that dephosphorylates 'Ser-3' in cofilin and probably also dephosphorylates phospho-serine residues in DSTN. Regulates cofilin-dependent actin cytoskeleton reorganization. Required for normal progress through mitosis and normal cytokinesis (By similarity). Does not dephosphorylate phospho-threonines in LIMK1. Does not dephosphorylate peptides containing phospho-tyrosine. Pyridoxal phosphate phosphatase. Has some activity towards pyridoxal 5'-phosphate (PLP), pyridoxine 5'-phosphate (PMP) and pyridoxine 5'-phosphate (PNP), with a highest activity with PLP followed by PNP.
Abbreviation	Recombinant Mouse Pdpx protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P60487
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MARCELRGAALRDVLGQAQGVLFDCDGVWNGERIVPGAPPELLQRLARAG KNTLFVSNNRRARPELALRFARLGFAGLRAEQLFSSALCAARLLRQRLSGPP DASGAVFVLGGEGRLRAELRAAGLRLAGDPGEDPRVRAVLVGYDEQFSFSRLT EACAHLRDPDCLLVATDRDPWHPLSDGSRTPTGTGSLAAAVETASGRQALVVG KPSPYMFQCITEDFSVDPARTLMVGDRLETDILFGHRCGMTTVLTLTGVSSLE EAQAYLTAGQRDLVPHYVYESIADLMEGLED
Research Area	Signal Transduction
Source	Yeast
Target Names	Pdpx
Protein Names	PLP phosphatase Alternative name(s): Chronophin
Expression Region	1-292aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	33.5 kDa
Protein Length	Full Length



Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Mouse Pyridoxal phosphate phosphatase (Pdxp) is produced in a yeast system, which appears to provide efficient and reliable results. The full-length protein covers amino acids 1 to 292 and includes an N-terminal 6xHis tag that makes purification and detection more straightforward. SDS-PAGE analysis confirms purity levels above 90%, though this protein is intended specifically for research applications where high-quality reagents matter most.

Pyridoxal phosphate phosphatase (Pdxp) is an enzyme that removes phosphate groups from pyridoxal 5'-phosphate (PLP), the active form of vitamin B6. It likely plays an important role in controlling PLP levels, which are essential for many metabolic pathways. Research on Pdxp may reveal new insights into how metabolic processes are regulated and how enzymes function, making it a useful tool for biochemistry and physiology studies.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Biochemical Characterization of Pyridoxal Phosphate Phosphatase Activity

This recombinant mouse Pdxp protein can help establish in vitro enzyme assays to study its phosphatase activity against pyridoxal phosphate and related vitamin B6 compounds. The N-terminal 6xHis tag makes protein purification easier and allows for immobilization during kinetic studies. Researchers can determine which substrates the enzyme prefers, find optimal reaction conditions, and measure kinetic parameters. These biochemical studies would provide basic insights into how vitamin B6 metabolism is regulated in mouse models.

2. Antibody Development and Validation Studies

The purified recombinant protein works well as an antigen for creating specific antibodies against mouse Pdxp through standard immunization methods. High



purity levels (>90%) should minimize unwanted cross-reactions with other proteins during antibody production. These antibodies could then be tested using the same recombinant protein in Western blots, ELISA, or immunoprecipitation experiments to verify specificity and binding strength.

3. Protein-Protein Interaction Studies

The 6xHis-tagged recombinant Pdxp can be used in pull-down experiments to find potential protein partners involved in vitamin B6 metabolism. The protein can be attached to nickel-affinity beads and mixed with mouse tissue extracts or cell lysates to capture interacting proteins. This method might uncover new regulatory mechanisms or metabolic complexes that involve pyridoxal phosphate phosphatase.

4. Structural and Biophysical Analysis

This full-length recombinant protein provides adequate material for structural studies, including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to determine the three-dimensional structure of mouse Pdxp. The purified protein can also be analyzed using biophysical methods such as dynamic light scattering, circular dichroism spectroscopy, or thermal stability tests to understand protein folding, stability, and structural changes under various conditions.

5. Comparative Species Analysis

The mouse-specific recombinant Pdxp allows for comparative studies with similar proteins from other species to examine evolutionary conservation and functional differences in vitamin B6 metabolism. Comparing enzyme activity across species, analyzing structural similarities, and studying substrate preferences using this mouse protein alongside human or other mammalian versions could provide insights into species-specific metabolic differences and regulatory systems.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL. We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.