Recombinant PLPP protein (His tag)

Catalog Number	543377
Synonyms	Pyridoxal phosphate phosphatase; PLP phosphatase
Species	Human
Expression System	E. coli
Accession	Q96GD0
Molecular Weight	Predictes a molecular mass of 33.35 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 34 kDa band.

Product Information

Sequence Region	1-296
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>90%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-296 aa (Q96GD0) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Chronophin (PDXP) Fragment (1-296) is a high-purity, stable protein designed for structural and biochemical studies. This fragment, encompassing the full-length protein, retains key enzymatic activities, including pyridoxal phosphate phosphatase and serine phosphatase functions, making it an essential tool for investigating vitamin B6 metabolism and actin cytoskeleton dynamics. Chronophin, encoded by the PDXP gene, is a multifunctional phosphatase with dual roles in cellular regulation. It primarily catalyzes the dephosphorylation of pyridoxal phosphate (PLP), pyridoxine 5'-phosphate (PNP), and pyridoxamine 5'-phosphate (PMP), with a substrate preference of PLP > PNP > PMP, thereby playing a critical role in vitamin B6 metabolism. Additionally, it acts as a protein serine phosphatase, specifically dephosphorylating Ser-3 in actin-depolymerizing factor (ADF)/cofilin family proteins such as CFL1 and DSTN. This activity regulates cofilin-dependent actin cytoskeleton reorganization, which is essential for processes like mitosis and cytokinesis. Chronophin does not dephosphorylate phosphothreonines in LIMK1 or phosphotyrosine-containing peptides. Subcellularly, it localizes to the cytoplasm, cytosol, cytoskeleton, and various membrane structures, including ruffle membranes, lamellipodia, and the cell membrane, often as a peripheral membrane protein on the cytoplasmic side. It dynamically associates with the actin cytoskeleton in membrane ruffles and lamellipodia, and during cell division, it redistributes to structures like the cleavage furrow, contractile ring, and midbody, underscoring its importance in cytoskeletal dynamics and cell cycle progression.