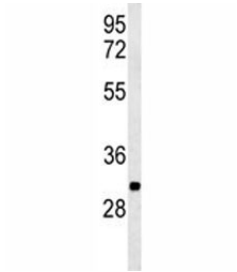
Phosphoglycolate Phosphatase Antibody / G3PP Polyclonal Antibody (F51955)

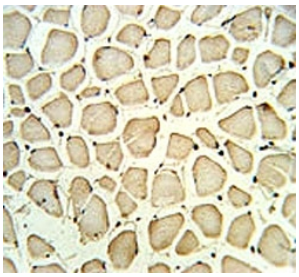
Catalog No.	Formulation	Size
F51955-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F51955-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

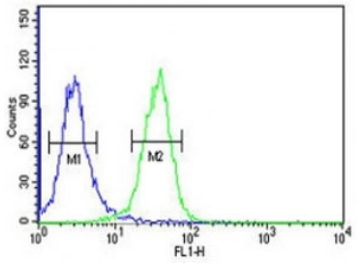
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	A6NDG6
Applications	Western blot: 1:1000 IHC (Paraffin): 1:50-1:100 Flow Cytometry: 1:10-1:50
Limitations	This Phosphoglycolate Phosphatase Antibody / G3PP Polyclonal Antibody is available for research use only.



Phosphoglycolate Phosphatase Antibody WB Analysis of Human K562 Cells. Western blot analysis of human K562 cell lysate using G3PP Polyclonal Antibody. A single prominent immunoreactive band is detected at approximately 32 kDa, consistent with the expected molecular weight of PGP/G3PP.



Phosphoglycolate Phosphatase Antibody IHC Staining of Skeletal Muscle Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded skeletal muscle tissue using G3PP Polyclonal Antibody. Brown DAB staining is visible throughout the cytoplasm of numerous skeletal muscle fibers, with variation in staining intensity between individual fibers. The connective tissue surrounding the fibers shows comparatively limited staining.



Phosphoglycolate Phosphatase Antibody FACS Analysis of Human K562 Cells. Flow cytometry analysis of human K562 cells using G3PP Polyclonal Antibody. The antibody-stained population (green) shows a rightward fluorescence shift relative to the negative control (blue), indicating antibody-associated staining. A FITC-conjugated goat anti-rabbit secondary antibody was used for detection.

Description

Phosphoglycolate Phosphatase Antibody / G3PP Polyclonal Antibody targets phosphoglycolate phosphatase (PGP), a metabolic enzyme also known as glycerol-3-phosphate phosphatase (G3PP). Encoded by the PGP gene, this protein belongs to the haloacid dehalogenase (HAD)-like hydrolase superfamily, whose members catalyze the hydrolysis of phosphorylated substrates. PGP has attracted interest because its enzymatic activities connect metabolic repair with the regulation of glycerol-3-phosphate, an important intermediate in carbohydrate and lipid metabolism.

Phosphoglycolate is a potentially disruptive metabolite that can arise during the processing of damaged DNA and other biochemical reactions. PGP catalyzes its conversion to glycolate and inorganic phosphate, helping prevent the accumulation of phosphorylated compounds that may interfere with normal metabolic processes. This activity is an example of metabolite repair, a protective mechanism through which enzymes eliminate unwanted byproducts generated during cellular metabolism.

Research has also established that PGP hydrolyzes glycerol-3-phosphate to glycerol and inorganic phosphate. Glycerol-3-phosphate serves as a metabolic connection between glycolysis, triglyceride synthesis, and glycerophospholipid production. Its conversion to glycerol provides an alternative route for handling glucose-derived carbon. This reaction can influence the availability of substrates for lipid synthesis and contribute to the regulation of intracellular metabolic balance.

Studies investigating G3PP have demonstrated its importance in cellular responses to nutrient availability and metabolic stress. By influencing glycerol-3-phosphate concentrations, the enzyme can affect glycerol production, lipid accumulation, and the distribution of carbon among metabolic pathways. Its activity has been investigated in relation to glucose metabolism, pancreatic beta-cell function, and mechanisms that protect cells from excessive nutrient-derived substrate accumulation.

PGP has also been characterized under the historical name AUM, reflecting its identification as an aspartate-based, magnesium-dependent phosphatase. These different names illustrate how biochemical studies have progressively expanded understanding of its functions. Phosphoglycolate Phosphatase Antibody supports investigations into the expression of this enzyme and its relationship to metabolic homeostasis. Understanding the regulation of PGP abundance and activity may provide additional insight into how cells coordinate metabolite repair, glycerol production, and lipid metabolism.

For additional PGP research, explore our PGP Antibody, featuring Western blot analysis across human and rodent samples, along with immunohistochemistry, immunofluorescence, and flow cytometry data.

Application Notes

Titration of the Phosphoglycolate Phosphatase Antibody / G3PP Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 33-62 from the human protein was used as the immunogen for this PGP / Phosphoglycolate

Phosphatase antibody.

Storage

Aliquot the PGP / Phosphoglycolate Phosphatase antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Glycerol-3-phosphate phosphatase antibody, Phosphoglycolate phosphatase PGP antibody, Aspartate-based ubiquitous Mg2+-dependent phosphatase antibody, G3PP antibody, AUM antibody, PGPase antibody

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