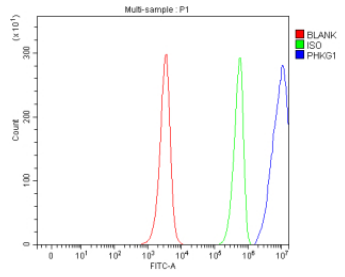
PHKG1 Antibody / Phosphorylase kinase gamma 1 (FY12680)

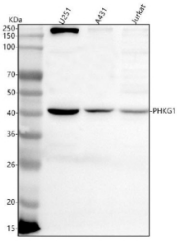
Catalog No.	Formulation	Size
FY12680	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q16816
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This PHKG1 antibody is available for research use only.



Flow Cytometry analysis of JK cells using anti-PHKG1 antibody. Overlay histogram showing JK cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-PHKG1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of PHKG1 using anti-PHKG1 antibody. Lane 1: human U251 whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Jurkat whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PHKG1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A predominant band is observed at ~40 kDa, slightly below the ~45 kDa calculated mass, consistent with reported faster migration and proteolytic trimming of the catalytic gamma subunit in cell lysates.

Description

PHKG1 antibody detects Phosphorylase kinase gamma 1, a catalytic subunit of the phosphorylase kinase (PhK) complex that plays a central role in glycogen metabolism. The UniProt recommended name is Phosphorylase kinase gamma 1 (PHKG1). This enzyme functions as a serine/threonine-specific protein kinase responsible for activating glycogen phosphorylase, the enzyme that catalyzes the rate-limiting step in glycogen breakdown. PHKG1 serves as the catalytic component within the multimeric PhK complex, which also includes alpha, beta, and delta subunits that provide regulatory and calcium-binding functions.

Phosphorylase kinase gamma 1 is predominantly expressed in skeletal muscle, where it regulates glycogenolysis in response to hormonal and neural stimulation. Activation of the enzyme occurs through phosphorylation and calcium binding, linking it directly to adrenergic and calcium signaling pathways. The PhK complex functions as a molecular bridge between intracellular calcium release and the mobilization of energy reserves during muscle contraction, ensuring that glucose-1-phosphate is made available for rapid ATP production.

Structurally, PHKG1 contains conserved kinase domains typical of the protein kinase superfamily, including the ATP-binding site and catalytic loop that mediates phosphate transfer. The gamma 1 isoform differs from the gamma 2 isoform (encoded by PHKG2), which is more abundant in liver tissue, highlighting its tissue-specific regulation. The PHKG1 gene is located on chromosome 7p11.2 and its expression is tightly regulated according to metabolic demand and muscle fiber type.

Defects or mutations in PHKG1 can lead to glycogen storage disease type IXd, a rare inherited metabolic disorder characterized by reduced phosphorylase kinase activity, muscle weakness, and exercise intolerance. Because of its key role in energy metabolism, PHKG1 is also investigated in studies of muscle physiology, insulin signaling, and exercise adaptation. Detection of Phosphorylase kinase gamma 1 using PHKG1 antibody allows researchers to monitor enzyme expression, activity, and localization in muscle and metabolic tissues.

PHKG1 antibody is useful for applications such as immunohistochemistry, immunofluorescence, and related assays examining kinase regulation and energy metabolism. By identifying the catalytic subunit of phosphorylase kinase, this antibody supports research into glycogen regulation, muscle energy dynamics, and kinase-mediated signaling networks. NSJ Bioreagents provides PHKG1 antibody reagents optimized for studies of glycogen metabolism and skeletal muscle biochemistry.

Application Notes

Optimal dilution of the PHKG1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PHKG1 recombinant protein (Position: E62-R353) was used as the immunogen for the PHKG1 antibody.

Storage

After reconstitution, the PHKG1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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