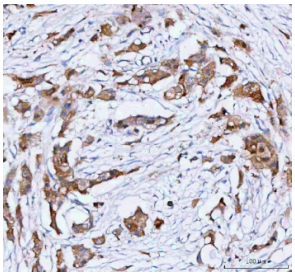
PHGDH Antibody / Serine Biosynthesis Enzyme Antibody (FY12088)

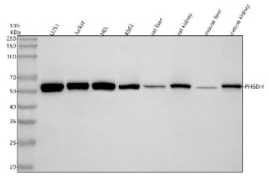
Catalog No.	Formulation	Size
FY12088	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

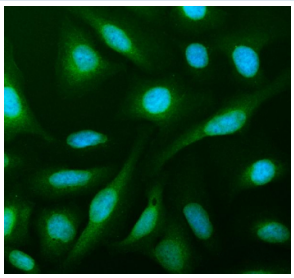
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O43175
Applications	ELISA: 0.1-0.5ug/ml Flow cytometry: 1-3ug/million cells Immunoprecipitation: 2-4ug/500ug of lysate Immunofluorescence: 5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry: 5ug/ml Western Blot: 0.25-0.5ug/ml
Limitations	This PHGDH Antibody / Serine Biosynthesis Enzyme Antibody is available for research use only.



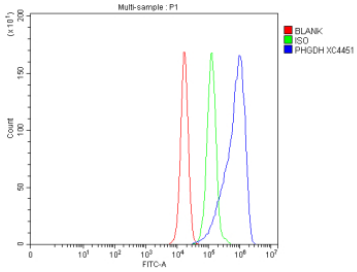
IHC analysis of PHGDH using anti-PHGDH antibody. PHGDH was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-PHGDH antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



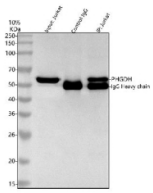
Western blot analysis of PHGDH using anti-PHGDH antibody. Lane 1: human U251 whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human HEL whole cell lysates, Lane 4: human K562 whole cell lysates, Lane 5: rat liver tissue lysates, Lane 6: rat kidney tissue lysates, Lane 7: mouse liver tissue lysates, Lane 8: mouse kidney tissue 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-PHGDH 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 specific band was detected for PHGDH at approximately 57 kDa. The expected band size for PHGDH is at 57 kDa.



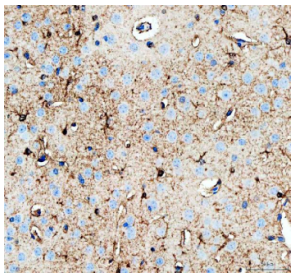
IF analysis of PHGDH using anti-PHGDH antibody (green). PHGDH was detected in an immunocytochemical section of U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-PHGDH antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



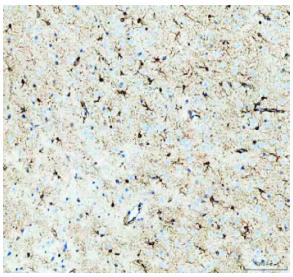
Flow Cytometry analysis of PC-3 cells using anti-PHGDH antibody. Overlay histogram showing PC-3 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-PHGDH 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 without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



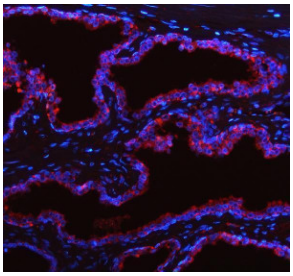
Immunoprecipitating PHGDH in Jurkat whole cell lysate. Western blot analysis of PHGDH using anti-PHGDH antibody. Lane 1: Jurkat whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti-PHGDH antibody in Jurkat whole cell lysate; Lane 3: anti-PHGDH antibody (2ug) + Jurkat whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-PHGDH antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A specific band was detected for PHGDH at approximately 57 kDa. The expected band size for PHGDH is at 57 kDa.



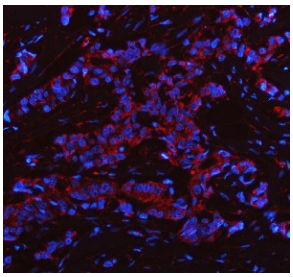
IHC analysis of PHGDH using anti-PHGDH antibody. PHGDH was detected in a paraffin-embedded section of mouse brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-PHGDH antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



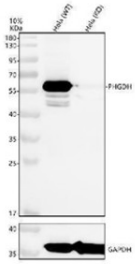
IHC analysis of PHGDH using anti-PHGDH antibody. PHGDH was detected in a paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-PHGDH antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



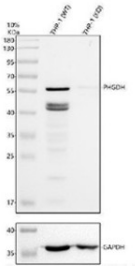
PHGDH Antibody Human Prostate Cancer IF. Immunofluorescent staining of FFPE human prostate cancer tissue with PHGDH Antibody at 5 ug/ml. HIER was performed using pH 8 EDTA buffer, followed by blocking with 10% goat serum. The tissue section was incubated with rabbit anti-PHGDH antibody overnight at 4Â°C, followed by Cy3 conjugated goat anti-rabbit IgG secondary antibody (red). Nuclei were counterstained with DAPI (blue). PHGDH Antibody demonstrates cytoplasmic staining consistent with Phosphoglycerate Dehydrogenase expression and supports studies of serine biosynthesis, amino acid metabolism and cancer metabolic regulation pathways.



PHGDH Antibody Human Breast Cancer IF. Immunofluorescent staining of FFPE human breast cancer tissue with PHGDH Antibody at 5 ug/ml. HIER was performed using pH 8 EDTA buffer, followed by blocking with 10% goat serum. The tissue section was incubated with rabbit anti-PHGDH antibody overnight at 4Â°C, followed by Cy3 conjugated goat anti-rabbit IgG secondary antibody (red). Nuclei were counterstained with DAPI (blue). PHGDH Antibody demonstrates cytoplasmic staining consistent with Phosphoglycerate Dehydrogenase expression and supports studies of serine biosynthesis, metabolic reprogramming and cancer metabolism pathways.



PHGDH Antibody HeLa Knockout Validation WB. Western blot testing of human HeLa wild-type (WT) and PHGDH knockout (KO) cell lysates with PHGDH Antibody at 0.5 ug/ml. Lane 1: HeLa WT; Lane 2: HeLa PHGDH KO. A specific band is detected at approximately 57 kDa in the WT lysate and is absent in the PHGDH KO sample, confirming antibody specificity. GAPDH was used as a loading control. PHGDH Antibody detects endogenous Phosphoglycerate Dehydrogenase expression and supports studies of serine biosynthesis, amino acid metabolism and metabolic pathway regulation.



PHGDH Antibody THP-1 Knockout Validation WB. Western blot testing of human THP-1 wild-type (WT) and PHGDH knockout (KO) cell lysates with PHGDH Antibody at 0.5 ug/ml. Lane 1: THP-1 WT; Lane 2: THP-1 PHGDH KO. A specific band is detected at approximately 57 kDa in the WT lysate and is absent in the PHGDH KO sample, confirming antibody specificity. GAPDH was used as a loading control. PHGDH Antibody detects endogenous Phosphoglycerate Dehydrogenase expression and supports studies of serine biosynthesis, amino acid metabolism and cellular metabolic regulation pathways.

Description

PHGDH Antibody / Serine Biosynthesis Enzyme Antibody detects phosphoglycerate dehydrogenase, the enzyme responsible for catalyzing the first and rate-limiting step of the de novo serine biosynthesis pathway. PHGDH converts the glycolytic intermediate 3-phosphoglycerate into 3-phosphohydroxypyruvate, directing carbon flow from glycolysis toward serine production and related metabolic pathways. Serine generated through this pathway supports protein synthesis, nucleotide production, lipid metabolism and one-carbon metabolism. Because of its central position connecting glycolysis and amino acid biosynthesis, PHGDH is an important target for researchers studying metabolic regulation and cellular growth pathways.

PHGDH expression and activity influence multiple biological processes that depend on metabolic adaptation. By regulating serine availability, PHGDH contributes to pathways controlling nucleotide synthesis, redox balance and methylation reactions. Increased reliance on de novo serine synthesis has been observed in many experimental models of rapidly proliferating cells, where metabolic demands require coordinated regulation of nutrient utilization. PHGDH Antibody is commonly used to study metabolic enzyme expression, amino acid biosynthesis and mechanisms controlling cellular metabolism.

Research involving PHGDH is especially important in the fields of cancer metabolism, developmental biology and metabolic disease research. Altered PHGDH expression has been studied in multiple tumor types due to its connection with metabolic reprogramming, proliferation and survival pathways. Beyond cancer research, PHGDH function is also investigated in neurological development and cellular physiology because serine metabolism contributes to essential biosynthetic processes. Analysis of PHGDH provides insight into how cells regulate metabolic networks under changing biological conditions.

PHGDH Antibody applications include detection of phosphoglycerate dehydrogenase expression, localization and regulation in biological samples using methods such as Western blot, immunohistochemistry, immunofluorescence and knockout validation studies. This antibody has been validated using PHGDH knockout cell models, where loss of the target protein confirms antibody specificity in controlled experimental systems. Evaluation of PHGDH supports research into serine biosynthesis, amino acid metabolism, glycolytic pathway regulation and cancer metabolic pathways. NSJ Bioreagents provides PHGDH Antibody / Serine Biosynthesis Enzyme Antibody for researchers studying metabolic regulation, biosynthetic pathways and cellular metabolism.

PHGDH Antibody detects a key serine biosynthesis enzyme involved in amino acid metabolism, glycolytic pathway regulation and cellular metabolic adaptation, making it a useful marker for research areas featured in our Metabolism Antibodies page.

Application Notes

Optimal dilution of the PHGDH Antibody / Serine Biosynthesis Enzyme Antibody should be determined by the researcher.

Immunogen

E.coli-derived human PHGDH recombinant protein (Position: L15-F533) was used as the immunogen for the PHGDH antibody.

Storage

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

Alternate Names

Phosphoglycerate Dehydrogenase Antibody, 3-Phosphoglycerate Dehydrogenase Antibody, PGDH Antibody, D-3-Phosphoglycerate Dehydrogenase Antibody, Serine Biosynthesis Enzyme Antibody, L-3-Phosphoglycerate Dehydrogenase Antibody

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