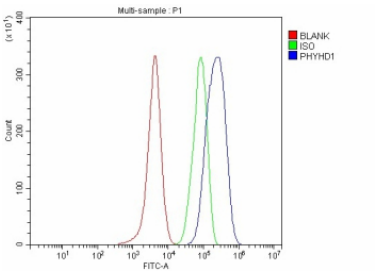
PHYHD1 Antibody / Phytanoyl-CoA dioxygenase domain-containing protein 1 (FY13202)

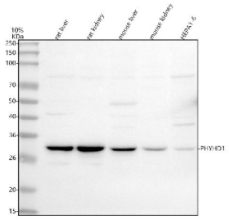
Catalog No.	Formulation	Size
FY13202	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

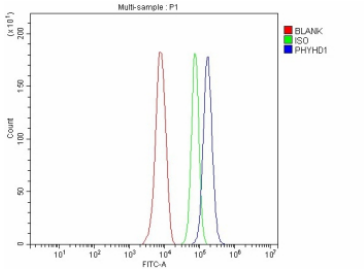
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q5SRE7
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This PHYHD1 antibody is available for research use only.



Flow Cytometry analysis of Hela cells using anti-PHYHD1 antibody. Overlay histogram showing Hela 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-PHYHD1 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.



Western blot analysis of PHYHD1 using anti-PHYHD1 antibody. Lane 1: rat liver tissue lysates, Lane 2: rat kidney tissue lysates, Lane 3: mouse liver tissue lysates, Lane 4: mouse kidney tissue lysates, Lane 5: mouse Hepa1-6 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-PHYHD1 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 PHYHD1 at approximately 32 kDa. The expected molecular weight of PHYHD1 is ~32 kDa.



Flow Cytometry analysis of HepG2 cells using anti-PHYHD1 antibody. Overlay histogram showing HepG2 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-PHYHD1 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.

Description

PHYHD1 antibody detects Phytanoyl-CoA dioxygenase domain-containing protein 1, a putative oxidative enzyme that may play roles in lipid metabolism and cellular stress responses. The UniProt recommended name is Phytanoyl-CoA dioxygenase domain-containing protein 1 (PHYHD1). This non-heme iron-dependent enzyme is thought to participate in hydroxylation or oxidative reactions linked to fatty acid metabolism and peroxisomal function.

Functionally, PHYHD1 antibody identifies a 290-amino-acid protein localized mainly in the cytoplasm and potentially associated with peroxisomes. PHYHD1 contains a conserved 2-oxoglutarate (2OG) and Fe(II)-dependent oxygenase domain that catalyzes oxidation reactions using molecular oxygen and 2-oxoglutarate as cofactors. Although its precise substrates remain under investigation, PHYHD1 may regulate lipid processing, hypoxia response, and reactive oxygen species signaling.

The PHYHD1 gene is located on chromosome 9q34.11 and is expressed in brain, liver, and kidney. Transcription of PHYHD1 is induced by cellular stress and metabolic cues, suggesting it plays a role in adaptive metabolic regulation. Comparative genomics studies indicate conservation across vertebrates, implying fundamental metabolic importance.

Pathologically, alterations in PHYHD1 expression have been associated with gliomas and metabolic disorders involving peroxisomal dysfunction. Reduced PHYHD1 levels may impair fatty acid oxidation and redox homeostasis, while overexpression correlates with enhanced metabolic flexibility in cancer cells. Research using PHYHD1 antibody supports studies in lipid oxidation, metabolic adaptation, and enzymatic regulation under hypoxia.

PHYHD1 antibody is validated for western blotting, immunofluorescence, and ELISA to detect 2OG-dependent oxygenases. NSJ Bioreagents provides PHYHD1 antibody reagents optimized for research in oxidative metabolism, enzymology, and metabolic disease mechanisms.

Structurally, Phytanoyl-CoA dioxygenase domain-containing protein 1 features a double-stranded beta-helix fold typical of 2OG oxygenases, with a conserved His-Asp-His metal-binding triad that coordinates Fe(II). This structure enables catalytic hydroxylation reactions essential for lipid and oxygen metabolism. This antibody facilitates analysis of PHYHD1's role in oxidative biochemistry, peroxisomal function, and metabolic stress response.

Application Notes

Optimal dilution of the PHYHD1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PHYHD1 recombinant protein (Position: M1-Q250) was used as the immunogen for the PHYHD1 antibody.

Storage

After reconstitution, the PHYHD1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.