

# PHYHD1 (B-6): sc-398378

## BACKGROUND

PHYHD1 (phytanoyl-CoA dioxygenase domain containing 1) is a 291 amino acid protein belonging to the PHYH family and the PHYHD1 subfamily. Encoded by a gene that maps to human chromosome 9q34.11, PHYHD1 exists as three alternatively spliced isoforms and likely functions as an  $\alpha$ -ketoglutarate-dependent dioxygenase. PHYHD1 participates in metal ion binding and oxidoreductase activity, thereby acting on single donors with incorporation of two atoms of oxygen. Related to PHYH (phytanoyl-CoA 2-hydroxylase), an Fe(II) and 2-oxoglutarate (2OG)-dependent oxygenase that catalyzes the initial  $\alpha$ -oxidation step in the degradation of phytanic acid in peroxisomes, PHYHD1 similarly exhibits additional homologues in a wide range of metazoans and bacteria. PHYHD1 also may play a role in DNA methylation in early postnatal liver development and mammalian differentiation.

## REFERENCES

- McDonough, M.A., et al. 2005. Structure of human phytanoyl-CoA 2-hydroxylase identifies molecular mechanisms of Refsum disease. *J. Biol. Chem.* 280: 41101-41110.
- Searls, T., et al. 2005. Studies on the specificity of unprocessed and mature forms of phytanoyl-CoA 2-hydroxylase and mutation of the iron binding ligands. *J. Lipid Res.* 46: 1660-1667.
- Schofield, C.J. and McDonough, M.A. 2007. Structural and mechanistic studies on the peroxisomal oxygenase phytanoyl-CoA 2-hydroxylase (PhyH). *Biochem. Soc. Trans.* 35: 870-875.
- McQuillin, A., et al. 2007. A microarray gene expression study of the molecular pharmacology of lithium carbonate on mouse brain mRNA to understand the neurobiology of mood stabilization and treatment of bipolar affective disorder. *Pharmacogenet. Genomics* 17: 605-617.

## CHROMOSOMAL LOCATION

Genetic locus: PHYHD1 (human) mapping to 9q34.11; Phyhd1 (mouse) mapping to 2 B.

## SOURCE

PHYHD1 (B-6) is a mouse monoclonal antibody raised against amino acids 1-56 mapping at the N-terminus of PHYHD1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PHYHD1 (B-6) is available conjugated to agarose (sc-398378 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398378 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398378 PE), fluorescein (sc-398378 FITC), Alexa Fluor® 488 (sc-398378 AF488), Alexa Fluor® 546 (sc-398378 AF546), Alexa Fluor® 594 (sc-398378 AF594) or Alexa Fluor® 647 (sc-398378 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398378 AF680) or Alexa Fluor® 790 (sc-398378 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

PHYHD1 (B-6) is recommended for detection of PHYHD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PHYHD1 siRNA (h): sc-92509, PHYHD1 siRNA (m): sc-152239, PHYHD1 shRNA Plasmid (h): sc-92509-SH, PHYHD1 shRNA Plasmid (m): sc-152239-SH, PHYHD1 shRNA (h) Lentiviral Particles: sc-92509-V and PHYHD1 shRNA (m) Lentiviral Particles: sc-152239-V.

Molecular Weight of PHYHD1 isoform 1: 32 kDa.

Molecular Weight of PHYHD1 isoform 2: 30 kDa.

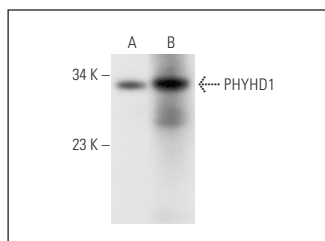
Molecular Weight of PHYHD1 isoform 3: 33 kDa.

Positive Controls: human liver extract: sc-363766 or mouse liver extract: sc-2256.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



PHYHD1 (B-6): sc-398378. Western blot analysis of PHYHD1 expression in human liver (A) and mouse liver (B) tissue extracts.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.