

# PHYHD1 (E-13): sc-137668

## 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

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- 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.
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## CHROMOSOMAL LOCATION

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

## SOURCE

PHYHD1 (E-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of PHYHD1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-137668 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PHYHD1 (E-13) is recommended for detection of PHYHD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PHYHD1 (E-13) is also recommended for detection of PHYHD1 in additional species, including porcine.

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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.