

# PHACS (MA-02): sc-130477

## BACKGROUND

PHACS (putative human ACS), also known as ACC or ACS (1-aminocyclopropane-1-carboxylate synthase homolog), is a 501 amino acid protein that belongs to the  $\alpha$  family of pyridoxal-5'-phosphate enzymes. PHACS is expressed in a wide range of tissues and shares structural similarity with AAT (aspartate aminotransferase), TAT (tyrosine aminotransferase) and enzymes that catalyze  $\beta$ -elimination reactions on amino acids. PHACS consists of overlapping aminotransferase I and  $\beta$ -eliminating lyase domains and is involved in the deamination of L-vinylglycine. The plant homolog ACS is the key metabolic intermediate in the biosynthesis of phytohormone ethylene, which is essential for the growth and development of plants. Unlike ACS, PHACS does not catalyze the synthesis of 1-amino-cyclopropane-1-carboxylate.

## REFERENCES

1. Penrose, D.M. and Glick, B.R. 1997. Enzymes that regulate ethylene levels—1-aminocyclopropane-1-carboxylic acid (ACC) deaminase, ACC synthase and ACC oxidase. *Indian J. Exp. Biol.* 35: 1-17.
2. Capitani, G., Hohenester, E., Feng, L., Storici, P., Kirsch, J.F. and Jansonius, J.N. 1999. Structure of 1-aminocyclopropane-1-carboxylate synthase, a key enzyme in the biosynthesis of the plant hormone ethylene. *J. Mol. Biol.* 294: 745-756.
3. Feng, L. and Kirsch, J.F. 2000. L-Vinylglycine is an alternative substrate as well as a mechanism-based inhibitor of 1-aminocyclopropane-1-carboxylate synthase. *Biochemistry* 39: 2436-2444.
4. Feng, L., Geck, M.K., Eliot, A.C. and Kirsch, J.F. 2000. Aminotransferase activity and bioinformatic analysis of 1-aminocyclopropane-1-carboxylate synthase. *Biochemistry* 39: 15242-15249.
5. Peixoto, B.R., Mikawa, Y. and Brenner, S. 2000. Characterization of the recombinase activating gene-1 and 2 locus in the Japanese pufferfish, *Fugu rubripes*. *Gene* 246: 275-283.
6. Koch, K.A., Capitani, G., Gruetter, M.G. and Kirsch, J.F. 2001. The human cDNA for a homologue of the plant enzyme 1-aminocyclopropane-1-carboxylate synthase encodes a protein lacking that activity. *Gene* 272: 75-84.
7. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608405. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: ACCS (human) mapping to 11p11.2.

## SOURCE

PHACS (MA-02) is a mouse monoclonal antibody raised against recombinant PHACS of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PHACS (MA-02) is recommended for detection of PHACS of human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PHACS siRNA (h): sc-62792, PHACS shRNA Plasmid (h): sc-62792-SH and PHACS shRNA (h) Lentiviral Particles: sc-62792-V.

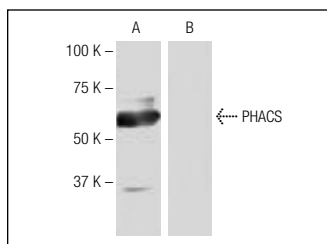
Molecular Weight of PHACS: 57 kDa.

Positive Controls: human PHACS transfected 293T whole cell lysate.

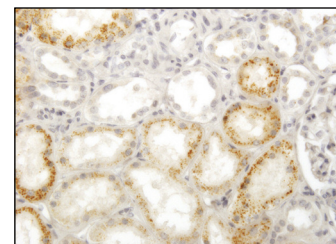
## RECOMMENDED SUPPORT REAGENTS

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, 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 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



PHACS (MA-02): sc-130477. Western blot analysis of PHACS expression in human PHACS transfected (A) and non-transfected (B) 293T whole cell lysates.



PHACS (MA-02): sc-130477. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing cytoplasmic localization.

## 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) for detailed protocols and support products.