

SAHH (A-11): sc-271389

BACKGROUND

SAHH (S-adenosylhomocysteine hydrolase), also known as AHCY, is a 432 amino acid cytoplasmic protein that localizes to the melanosome, a melanin-containing organelle. An essential component of amino acid biosynthesis, SAHH catalyzes the reversible hydrolysis of S-adenosylhomocysteine (SAH) to produce adenosine and L-homocysteine. Through its catalytic activity, SAHH regulates the intracellular levels of SAH and may play a key role in controlling methyltransferase reactions. SAHH exists as a homotetramer that can bind one NAD per subunit and is involved in the activated methyl cycle (a reaction in which the methyl group of methionine is activated by the formation of S-adenosylmethionine). Defects in the gene encoding SAHH result in elevated levels of methionine which cause hypermethioninemia, a disease characterized by sluggishness, muscle weakness and liver problems.

REFERENCES

1. Elrod, P., et al. 2002. Contributions of active site residues to the partial and overall catalytic activities of human S-adenosylhomocysteine hydrolase. *Biochemistry* 41: 8134-8142.
2. Yang, X., et al. 2003. Catalytic strategy of S-adenosyl-L-homocysteine hydrolase: transition-state stabilization and the avoidance of abortive reactions. *Biochemistry* 42: 1900-1909.

CHROMOSOMAL LOCATION

Genetic locus: AHCY (human) mapping to 20q11.22; Ahcy (mouse) mapping to 2 H1.

SOURCE

SAHH (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 296-333 within an internal region of SAHH of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SAHH (A-11) is available conjugated to agarose (sc-271389 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271389 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271389 PE), fluorescein (sc-271389 FITC), Alexa Fluor® 488 (sc-271389 AF488), Alexa Fluor® 546 (sc-271389 AF546), Alexa Fluor® 594 (sc-271389 AF594) or Alexa Fluor® 647 (sc-271389 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271389 AF680) or Alexa Fluor® 790 (sc-271389 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271389 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

SAHH (A-11) is recommended for detection of SAHH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

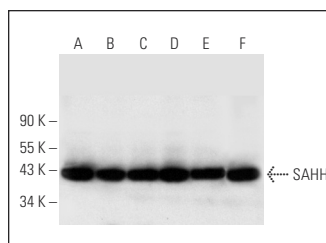
SAHH (A-11) is also recommended for detection of SAHH in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for SAHH siRNA (h): sc-62972, SAHH siRNA (m): sc-62973, SAHH shRNA Plasmid (h): sc-62972-SH, SAHH shRNA Plasmid (m): sc-62973-SH, SAHH shRNA (h) Lentiviral Particles: sc-62972-V and SAHH shRNA (m) Lentiviral Particles: sc-62973-V.

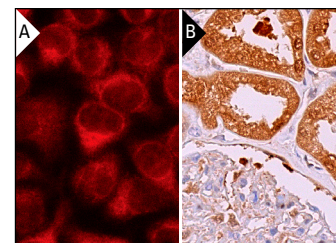
Molecular Weight of SAHH: 48 kDa.

Positive Controls: A549 whole cell lysate: sc-2413, HEL 92.1.7 cell lysate: sc-2270 or HeLa whole cell lysate: sc-2200.

DATA



SAHH (A-11): sc-271389. Western blot analysis of SAHH expression in HEL 92.1.7 (A), HeLa (B), A549 (C), Raji (D) and Jurkat (E) whole cell lysates and human kidney tissue extract (F).



SAHH (A-11): sc-271389. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and nuclear staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

1. Zhou, J., et al. 2015. H19 lncRNA alters DNA methylation genome wide by regulating S-adenosylhomocysteine hydrolase. *Nat. Commun.* 6: 10221.
2. Wang, J., et al. 2019. The long noncoding RNA H19 promotes tamoxifen resistance in breast cancer via autophagy. *J. Hematol. Oncol.* 12: 81.
3. Cao, J., et al. 2020. DJ-1 suppresses ferroptosis through preserving the activity of S-adenosyl homocysteine hydrolase. *Nat. Commun.* 11: 1251.
4. Villa, E., et al. 2021. mTORC1 stimulates cell growth through SAM synthesis and m⁶A mRNA-dependent control of protein synthesis. *Mol. Cell* 81: 2076-2093.e9.
5. Alborzina, H., et al. 2022. MYCN mediates cysteine addiction and sensitizes neuroblastoma to ferroptosis. *Nat. Cancer* 3: 471-485.

RESEARCH USE

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