SANTA CRUZ BIOTECHNOLOGY, INC.

SEPHS1 (F-6): sc-365945

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

SEPHS1 (selenophosphate synthetase 1), also known as SELD, SPS or SPS1, is a 392 amino acid member of the selenophosphate synthetase 1 family and is one of two mammalian homologs of the eubacteria selenophosphate synthetase protein SelD. SelD is an enzyme that generates the selenium donor for the biosynthesis of selenocysteine, an amino acid that is co-translationally incorporated into selenoproteins at in-frame UGA codons. SEPHS1 has a similar function to SelD and specifically catalyzes the formation of selenophosphate (the active selenium donor) from selenide, ATP and H_2O. Proper SEPHS1 function depends on a selenium salvage system that recycles L-selenocysteine, thereby providing the substrates for selenophosphate synthesis.

CHROMOSOMAL LOCATION

Genetic locus: SEPHS1 (human) mapping to 10p13; Sephs1 (mouse) mapping to 2 A1.

SOURCE

SEPHS1 (F-6) is a mouse monoclonal antibody raised against amino acids 1-65 mapping at the N-terminus of SEPHS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SEPHS1 (F-6) is available conjugated to agarose (sc-365945 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365945 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365945 PE), fluorescein (sc-365945 FITC), Alexa Fluor® 488 (sc-365945 AF488), Alexa Fluor® 546 (sc-365945 AF546), Alexa Fluor® 594 (sc-365945 AF594) or Alexa Fluor® 647 (sc-365945 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365945 AF680) or Alexa Fluor® 790 (sc-365945 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SEPHS1 (F-6) is recommended for detection of SEPHS1 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), 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).

Suitable for use as control antibody for SEPHS1 siRNA (h): sc-90338, SEPHS1 siRNA (m): sc-153337, SEPHS1 shRNA Plasmid (h): sc-90338-SH, SEPHS1 shRNA Plasmid (m): sc-153337-SH, SEPHS1 shRNA (h) Lentiviral Particles: sc-90338-V and SEPHS1 shRNA (m) Lentiviral Particles: sc-153337-V.

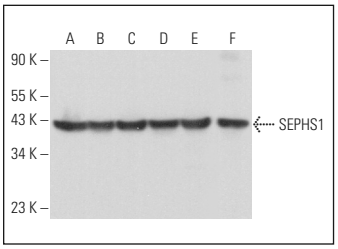
Molecular Weight of SEPHS1: 43 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, C6 whole cell lysate: sc-364373 or Jurkat whole cell lysate: sc-2204.

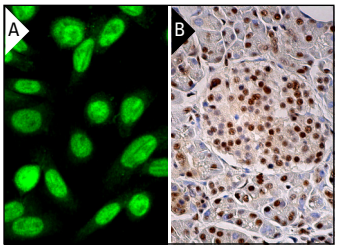
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SEPHS1 (F-6): sc-365945. Western blot analysis of SEPHS1 expression in c4 (**A**), C6 (**B**), Jurkat (**C**), Hep G2 (**D**) and T-47D (**E**) whole cell lysates and rat liver tissue extract (**F**).



SEPHS1 (F-6): sc-365945. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin embedded human pancreas tissue showing nuclear staining of Islets of Langerhans and glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lee, M.O. and Cho, Y.S. 2019. The role of selenium-mediated redox signaling by selenophosphate synthetase 1 (SEPHS1) in hESCs. Biochem. Biophys. Res. Commun. 520: 406-412.
2. Jung, J., et al. 2021. Constitutive oxidative stress by SEPHS1 deficiency induces endothelial cell dysfunction. Int. J. Mol. Sci. 22: 11646.
3. Eagle, K., et al. 2022. An oncogenic enhancer encodes selective selenium dependency in AML. Cell Stem Cell 29: 386-399.e7.
4. Kang, D., et al. 2022. Selenophosphate synthetase 1 deficiency exacerbates osteoarthritis by dysregulating redox homeostasis. Nat. Commun. 13: 779.

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 for detailed protocols and support products.