SANTA CRUZ BIOTECHNOLOGY, INC.

SEPHS2 (H-60): sc-135402

BACKGROUND

SEPHS2 (selenophosphate synthetase 2), also known as SPS2, selenium donor protein 2 or selenide water dikinase 2, is a member of the selenophosphate synthetase 1 family of proteins. SEPHS2 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. SEPHS2 has a similar function to SelD and specifically catalyzes the formation of selenophosphate (the active selenium donor) from selenide and ATP. The knockdown of SEPHS2 expression greatly impairs selenoprotein biosynthesis, suggesting that SEPHS2 is the mammalian enzyme responsible for generating the selenium donor and regulating selenoprotein synthesis. In addition, SEPHS2 is itself a selenoprotein, implying that it may also function as an auto-regulator.

REFERENCES

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2. Kim, I.Y., et al. 1997. Fetal mouse selenophosphate synthetase 2 (SPS2): characterization of the cysteine mutant form overproduced in a baculovirus-insect cell system. Proc. Natl. Acad. Sci. USA 94: 418-421.
3. Lescure, A., et al. 1999. Novel selenoproteins identified in silico and *in vivo* by using a conserved RNA structural motif. J. Biol. Chem. 274: 38147-38154.
4. Kim, T.S., et al. 1999. Fetal mouse selenophosphate synthetase 2 (SPS2): biological activities of mutant forms in *Escherichia coli.* Mol. Cells 9: 422-428.
5. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606218. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Tamura, T., et al. 2004. Selenophosphate synthetase genes from lung adenocarcinoma cells: Sps1 for recycling L-selenocysteine and Sps2 for selenite assimilation. Proc. Natl. Acad. Sci. USA 101: 16162-16167.

CHROMOSOMAL LOCATION

Genetic locus: SEPHS2 (human) mapping to 16p11.2; Sephs2 (mouse) mapping to 7 F3.

SOURCE

SEPHS2 (H-60) is a rabbit polyclonal antibody raised against amino acids 1-60 mapping at the N-terminus of SEPHS2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

SEPHS2 (H-60) is recommended for detection of SEPHS2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SEPHS2 siRNA (h): sc-93120, SEPHS2 siRNA (m): sc-153338, SEPHS2 shRNA Plasmid (h): sc-93120-SH, SEPHS2 shRNA Plasmid (m): sc-153338-SH, SEPHS2 shRNA (h) Lentiviral Particles: sc-93120-V and SEPHS2 shRNA (m) Lentiviral Particles: sc-153338-V.

Molecular Weight of SEPHS2: 49 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.