SEPHS1 (h): 293 Lysate: sc-110813



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 H2O. Proper SEPHS1 function depends on a selenium salvage system that recycles L-selenocysteine, thereby providing the substrates for selenophosphate synthesis.

REFERENCES

- Low, S.C., Harney, J.W. and Berry, M.J. 1995. Cloning and functional characterization of human selenophosphate synthetase, an essential component of selenoprotein synthesis. J. Biol. Chem. 270: 21659-21664.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600902. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
- 3. Tamura, T., Yamamoto, S., Takahata, M., Sakaguchi, H., Tanaka, H., Stadtman, T.C. and Inagaki, K. 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.
- 4. Saiki, R., Nagata, A., Kainou, T., Matsuda, H. and Kawamukai, M. 2005. Characterization of solanesyl and decaprenyl diphosphate synthases in mice and humans. FEBS J. 272: 5606-5622.
- Chung, H.J., Yoon, S.I., Shin, S.H., Koh, Y.A., Lee, S.J., Lee, Y.S. and Bae, S. 2006. p53-Mediated enhancement of radiosensitivity by selenophosphate synthetase 1 overexpression. J. Cell. Physiol. 209: 131-141.
- Hoffmann, P.R., Höge, S.C., Li, P.A., Hoffmann, F.W., Hashimoto, A.C. and Berry, M.J. 2007. The selenoproteome exhibits widely varying, tissuespecific dependence on selenoprotein P for selenium supply. Nucleic Acids Res. 35: 3963-3973.
- Lobanov, A.V., Hatfield, D.L. and Gladyshev, V.N. 2008. Selenoproteinless animals: selenophosphate synthetase SPS1 functions in a pathway unrelated to selenocysteine biosynthesis. Protein Sci. 17: 176-182.

CHROMOSOMAL LOCATION

Genetic locus: SEPHS1 (mouse) mapping to 10p13.

PRODUCT

SEPHS1 (h): 293 Lysate represents a lysate of human SEPHS1 transfected 293 cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

SEPHS1 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive SEPHS1 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

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.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3801 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com