

ECHS1 (T-24): sc-133534

BACKGROUND

ECHS1 (enoyl-CoA hydratase 1), also known as SCEH (short chain enoyl-CoA hydratase), is a 290 amino acid protein that localizes to the mitochondrial matrix and belongs to the enoyl-CoA hydratase family. Expressed in muscle, liver and fibroblasts, with low expression in kidney and spleen, ECHS1 exists as a homohexamer that functions in the second step of the mitochondrial fatty acid β -oxidation pathway. Specifically, ECHS1 catalyzes the hydration of 2-*trans*-enoyl-coenzyme A (CoA) intermediates to L-3-hydroxyacyl-CoAs, a reaction that is essential for proper lipid metabolism. Human ECHS1 shares 87% homology with its rat counterpart, suggesting a conserved function between species. Multiple isoforms of ECHS1 exist as a result of alternative splicing events. The gene encoding ECHS1 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

REFERENCES

1. Stern, J.R. and Del Campillo, A. 1956. Enzymes of fatty acid metabolism. II. Properties of crystalline crotonase. *J. Biol. Chem.* 218: 985-1002.
2. Li, J., et al. 1991. Mitochondrial metabolism of valproic acid. *Biochemistry* 30: 388-394.
3. Kanazawa, M., et al. 1993. Molecular cloning and sequence analysis of the cDNA for human mitochondrial short-chain enoyl-CoA hydratase. *Enzyme Protein* 47: 9-13.
4. Jackson, S., et al. 1995. Characterisation of a novel enzyme of human fatty acid β -oxidation: a matrix-associated, mitochondrial 2-enoyl-CoA hydratase. *Biochem. Biophys. Res. Commun.* 214: 247-253.
5. Janssen, U., et al. 1997. Human mitochondrial enoyl-CoA hydratase gene (ECHS1): structural organization and assignment to chromosome 10q26.2-q26.3. *Genomics* 40: 470-475.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602292. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Takahashi, M., et al. 2007. Suppression of virus replication via down-modulation of mitochondrial short chain enoyl-CoA hydratase in human glioblastoma cells. *Antiviral Res.* 75: 152-158.

CHROMOSOMAL LOCATION

Genetic locus: ECHS1 (human) mapping to 10q26.3; Echs1 (mouse) mapping to 7 F4.

SOURCE

ECHS1 (T-24) is a Protein A purified rabbit polyclonal antibody raised against synthetic ECHS1 peptide of human origin.

STORAGE

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

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

ECHS1 (T-24) is recommended for detection of ECHS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ECHS1 siRNA (h): sc-90799, ECHS1 siRNA (m): sc-143286, ECHS1 shRNA Plasmid (h): sc-90799-SH, ECHS1 shRNA Plasmid (m): sc-143286-SH, ECHS1 shRNA (h) Lentiviral Particles: sc-90799-V and ECHS1 shRNA (m) Lentiviral Particles: sc-143286-V.

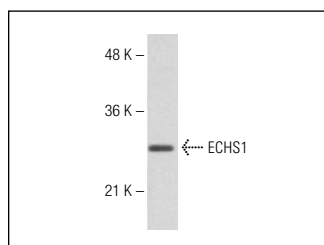
Molecular Weight of ECHS1: 31 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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).

DATA



ECHS1 (T-24): sc-133534. Western blot analysis of ECHS1 expression in Jurkat whole cell lysate.

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.