

# ECHS1 (E-14): sc-164255

## 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, ECCHS1 exists as a homohexamer that functions in the second step of the mitochondrial fatty acid beta-oxidation pathway. Specifically, ECCHS1 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 ECCHS1 shares 87% homology with its rat counterpart, suggesting a conserved function between species. Multiple isoforms of ECCHS1 exist as a result of alternative splicing events. The gene encoding ECCHS1 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., et al. 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  $\beta$ -oxidation: a matrix-associated, mitochondrial 2-enoyl-CoA hydratase. *Biochem. Biophys. Res. Commun.* 214: 247-253.

## CHROMOSOMAL LOCATION

Genetic locus: ECCHS1 (human) mapping to 10q26.3; Echs1 (mouse) mapping to 7 F4.

## SOURCE

ECCHS1 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ECCHS1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-164255 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

ECCHS1 (E-14) is recommended for detection of ECCHS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

ECCHS1 (E-14) is also recommended for detection of ECCHS1 in additional species, including bovine and porcine.

Suitable for use as control antibody for ECCHS1 siRNA (h): sc-90799, ECCHS1 siRNA (m): sc-143286, ECCHS1 shRNA Plasmid (h): sc-90799-SH, ECCHS1 shRNA Plasmid (m): sc-143286-SH, ECCHS1 shRNA (h) Lentiviral Particles: sc-90799-V and ECCHS1 shRNA (m) Lentiviral Particles: sc-143286-V.

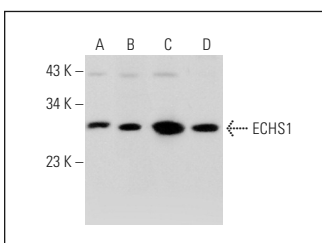
Molecular Weight of ECCHS1: 31 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RT-4 whole cell lysate: sc-364257 or human liver extract: sc-363766.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



ECCHS1 (E-14): sc-164255. Western blot analysis of ECCHS1 expression in HeLa (A) and RT-4 (B) whole cell lysates and human liver (C) and human heart (D) tissue extracts.

## RESEARCH USE

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