

# ACSVL4 (B-5): sc-101271

## BACKGROUND

Acyl-coenzyme A synthetases (ACSs) are a large family of related enzymes known to catalyze the fundamental initial reaction in fatty acid metabolism. The ACS family is roughly characterized based on fatty acid chain length preference among different members. The nomenclature in the ACS family reflects this relationship and includes short-chain ACS (ACSS), medium-chain ACS (ACSM), long-chain ACS (ACSL) and very long-chain ACS (ACSVL). ACSVL family members are capable of activating both long-chain fatty acids (LCFAs) and very long-chain (VLCFAs) fatty acids. There are six members of the human ACSVL subfamily which have been described as solute carrier family 27A (SLC27A) gene products. They represent a group of evolutionarily conserved fatty acid transport proteins (FATPs) recognized for their role in facilitating translocation of long-chain fatty acids across the plasma membrane. The family nomenclature has recently been unified with their respective acyl-CoA synthetase family designations: ACSVL1 (FATP2), ACSVL2 (FATP6), ACSVL3 (FATP3), ACSVL4 (FATP4), ACSVL5 (FATP1) and ACSVL6 (FATP5). ACSVLs have unique expression patterns and are found in major organs of fatty acid metabolism, such as adipose tissue, liver, heart and kidney.

## REFERENCES

- Schaffer, J.E., et al. 1994. Expression cloning and characterization of a novel adipocyte long chain fatty acid transport protein. *Cell* 79: 427-436.
- Hirsch, D., et al. 1998. A family of fatty acid transporters conserved from mycobacterium to man. *Proc. Natl. Acad. Sci. USA* 95: 8625-8629.
- Abumrad, N., et al. 1999. Membrane proteins implicated in long-chain fatty acid uptake by mammalian cells: CD36, FATP, FABPm. *Biochim. Biophys. Acta* 1441: 4-13.
- Binnert, C., et al. 2000. Fatty acid transport protein-1 mRNA expression in skeletal muscle and in adipose tissue in humans. *Am. J. Physiol. Endocrinol. Metab.* 279: E1072-E1079.

## CHROMOSOMAL LOCATION

Genetic locus: SLC27A4 (human) mapping to 9q34.11.

## SOURCE

ACSVL4 (B-5) is a mouse monoclonal antibody raised against recombinant ACSVL4 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain 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.

## PROTOCOLS

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

## APPLICATIONS

ACSVL4 (B-5) is recommended for detection of ACSVL4 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ACSVL4 siRNA (h): sc-37094, ACSVL4 shRNA Plasmid (h): sc-37094-SH and ACSVL4 shRNA (h) Lentiviral Particles: sc-37094-V.

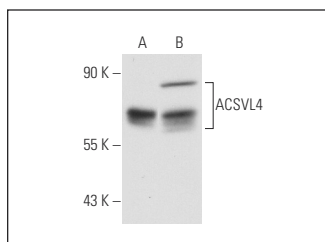
Molecular Weight of ACSVL4: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## 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).

## DATA



ACSVL4 (B-5): sc-101271. Western blot analysis of ACSVL4 expression in 293T (A) and HeLa (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Lager, S., et al. 2011. Effect of IL-6 and TNF-α on fatty acid uptake in cultured human primary trophoblast cells. *Placenta* 32: 121-127.
- Gaccioli, F., et al. 2013. Maternal overweight induced by a diet with high content of saturated fat activates placental mTOR and eIF2α signaling and increases fetal growth in rats. *Biol. Reprod.* 89: 96.
- Lager, S., et al. 2016. Protein expression of fatty acid transporter 2 is polarized to the trophoblast basal plasma membrane and increased in placentas from overweight/obese women. *Placenta* 40: 60-66.

## RESEARCH USE

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