

Lipin-1 (C-15): sc-50049

BACKGROUND

The Lipin family of nuclear proteins contains three members: Lipin-1, Lipin-2 and Lipin-3, all of which contain a nuclear signal sequence, a highly conserved amino-terminal (NLIP) domain and a carboxy-terminal (CLIP) domain. Lipin-1 is crucial for normal adipose tissue development and metabolism. Lipin-1 selectively activates a subset of PGC-1 α target pathways, including fatty acid oxidation and mitochondrial oxidative phosphorylation, by inducing expression of the nuclear receptor PPAR α . Lipin-1 also inactivates the lipogenic program and suppresses circulating lipid levels. An abundance of Lipin-1 promotes fat accumulation and Insulin sensitivity, whereas a deficiency in Lipin-1 may deter normal adipose tissue development, resulting in Insulin resistance and lipodystrophy, a heterogeneous group of disorders characterized by loss of body fat, fatty liver, hypertriglyceridemia and Insulin resistance.

REFERENCES

- Peterfy, M., et al. 2001. Lipodystrophy in the fld mouse results from mutation of a new gene encoding a nuclear protein, Lipin. *Nat. Genet.* 27: 121-124.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605518. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Reitman, M.L. 2005. The fat and thin of Lipin. *Cell Metab.* 1: 5-6.
- Phan, J. and Reue, K. 2005. Lipin, a lipodystrophy and obesity gene. *Cell Metab.* 1: 73-83.
- Phan, J., et al. 2005. Biphasic expression of Lipin suggests dual roles in adipocyte development. *Drug News Perspect.* 18: 5-11.
- Finck, B.N., et al. 2006. Lipin-1 is an inducible amplifier of the hepatic PGC-1 α /PPAR α regulatory pathway. *Cell Metab.* 4: 199-210.

CHROMOSOMAL LOCATION

Genetic locus: LPIN1 (human) mapping to 2p25.1; Lpin1 (mouse) mapping to 12 A1.1.

SOURCE

Lipin-1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Lipin-1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-50049 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Lipin-1 (C-15) is recommended for detection of Lipin-1 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

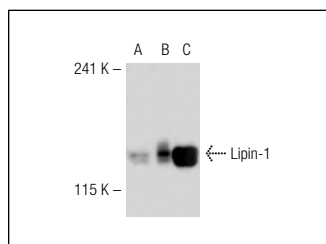
Lipin-1 (C-15) is also recommended for detection of Lipin-1 in additional species, including equine and canine.

Suitable for use as control antibody for Lipin-1 siRNA (h): sc-60940, Lipin-1 siRNA (m): sc-60941, Lipin-1 shRNA Plasmid (h): sc-60940-SH, Lipin-1 shRNA Plasmid (m): sc-60941-SH, Lipin-1 shRNA (h) Lentiviral Particles: sc-60940-V and Lipin-1 shRNA (m) Lentiviral Particles: sc-60941-V.

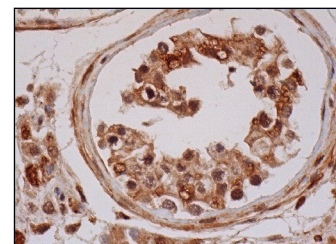
Molecular Weight of Lipin-1: 102 kDa.

Positive Controls: Lipin-1 (h): 293T Lysate: sc-114816 or Jurkat whole cell lysate: sc-2204.

DATA



Lipin-1 (C-15): sc-50049. Western blot analysis of Lipin-1 expression in non-transfected 293T: sc-117752 (A), human Lipin-1 transfected 293T: sc-114816 (B) and Jurkat (C) whole cell lysates.



Lipin-1 (C-15): sc-50049 Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells.

SELECT PRODUCT CITATIONS

- Liu, G.H., et al. 2010. Lipin proteins form homo- and hetero-oligomers. *Biochem. J.* 432: 65-76.

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.

MONOS
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Try **Lipin-1 (B-12): sc-376874**, our highly recommended monoclonal alternative to Lipin-1 (C-15).