



Lipin-3 (E-20): sc-50058

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. Lipin-2 is linked to Majeed syndrome, an autosomal recessive, autoinflammatory disorder. Lipin-3 is an 851 amino acid protein that localizes to the nucleus. Lipin-3 observations are useful in studies related to adipose tissue development in the context of obesity, fatty liver dystrophy, lipodystrophy, insulin resistance and type 2 diabetes.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605520. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Phan, J., Peterfy, M. and Reue, K. 2004. Lipin expression preceding peroxisome is critical for adipogenesis *in vivo* and *in vitro*. *J. Biol. Chem.* 279: 29558-29564.
3. Reitman, M.L. 2005. The fat and thin of lipin. *Cell Metab.* 1: 5-6.
4. Phan, J. and Reue, K. 2005. Lipin, a lipodystrophy and obesity gene. *Cell Metab.* 1: 73-83.
5. Scavallo, G.S., Paluru, P.C., Zhou, J., White, P.S., Rappaport, E.F. and Young, T.L. 2005. Genomic structure and organization of the high grade Myopia-2 locus (MYP2) critical region: mutation screening of nine positional candidate genes. *Mol. Vis.* 11: 97-110.
6. Han, G.S., Wu, W.I. and Carman, G.M. 2006. The *Saccharomyces cerevisiae* Lipin homolog is a Mg²⁺-dependent phosphatidate phosphatase enzyme. *J. Biol. Chem.* 281: 9210-9218.
7. Parsons, T.R. 2006. Studies on lipin-protein complexes: lecithin-caseinogen complexes. *Biochem. J.* 22: 800-810.
8. Suviolahti, E., Reue, K., Cantor, R.M., Phan, J., Gentile, M., Naukkarinen, J., Soro-Paavonen, A., Oksanen, L., Kaprio, J., Rissanen, A., Salomaa, V., Kontula, K., Taskinen, M.R., Pajukanta, P. and Peltonen, L. 2006. Cross-species analyses implicate Lipin-1 involvement in human glucose metabolism. *Hum. Mol. Genet.* 15: 377-386.

CHROMOSOMAL LOCATION

Genetic locus: LPIN3 (human) mapping to 20q11.2-q12; Lpin3 (mouse) mapping to 2 H2.

SOURCE

Lipin-3 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Lipin-3 of mouse origin.

RESEARCH USE

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

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-50056 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Lipin-3 (E-20) is recommended for detection of Lipin-3 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for Lipin-3 siRNA (m): sc-60945.

Molecular Weight of Lipin-3: 94 kDa.

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) 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.

STORAGE

Store at 4° C, do not freeze; stable for one year from the date of shipment.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.