SANTA CRUZ BIOTECHNOLOGY, INC.

Lipin-3 (H-125): sc-98451

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-1α target pathways, including fatty acid oxidation and mitochondrial oxidative phosphorylation, by inducing expression of the nuclear receptor PPARα. 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., et al. 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., et al. 2005. Lipin, a lipodystrophy and obesity gene. Cell Metab. 1: 73-83.
5. Scavello, G.S., et al. 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., et al. 2006. The *Saccharomyces cerevisiae* Lipin homolog is a Mg^{2+}-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., et al. 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 20q12.

SOURCE

Lipin-3 (H-125) is a rabbit polyclonal antibody raised against amino acids 250-363 mapping within an internal region of Lipin-3 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.

PROTOCOLS

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

PRODUCT

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

APPLICATIONS

Lipin-3 (H-125) is recommended for detection of Lipin-3 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)], 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 (h): sc-60944, Lipin-3 shRNA Plasmid (h): sc-60944-SH and Lipin-3 shRNA (h) Lentiviral Particles: sc-60944-V.

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 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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