SANTA CRUZ BIOTECHNOLOGY, INC.

Lipin-1 (B-12): sc-376874

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Lipin-1 (B-12) is a mouse monoclonal antibody raised against amino acids 261-380 mapping within an internal region of Lipin-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Lipin-1 (B-12) is available conjugated to agarose (sc-376874 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376874 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376874 PE), fluorescein (sc-376874 FITC), Alexa Fluor® 488 (sc-376874 AF488), Alexa Fluor® 546 (sc-376874 AF546), Alexa Fluor® 594 (sc-376874 AF594) or Alexa Fluor® 647 (sc-376874 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376874 AF680) or Alexa Fluor® 790 (sc-376874 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Lipin-1 (B-12) is recommended for detection of Lipin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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-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.

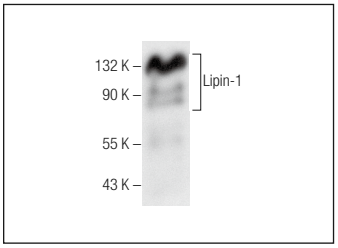
Molecular Weight of Lipin-1: 102 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or AN3 CA cell lysate: sc-24662.

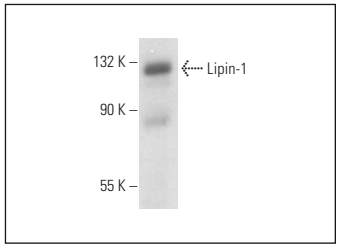
STORAGE

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

DATA



Lipin-1 (B-12): sc-376874. Western blot analysis of Lipin-1 expression in Jurkat whole cell lysate.



Lipin-1 (B-12): sc-376874. Western blot analysis of Lipin-1 expression in AN3 CA whole cell lysate.

SELECT PRODUCT CITATIONS

1. Shimizu, K., et al. 2017. The SCFβ-TRCP E3 ubiquitin ligase complex targets Lipin-1 for ubiquitination and degradation to promote hepatic lipogenesis. Sci. Signal. 10: eaah4117.
2. Mingorance, L., et al. 2018. Host phosphatidic acid phosphatase Lipin-1 is rate limiting for functional hepatitis C virus replicase complex formation. PLoS Pathog. 14: e1007284.
3. Li, T.Y., et al. 2018. Tip60-mediated lipin 1 acetylation and ER translocation determine triacylglycerol synthesis rate. Nat. Commun. 9: 1916.
4. Castro, V., et al. 2019. Differential roles of Lipin-1 and Lipin-2 in the Hepatitis C virus replication cycle. Cells 8: 1456.
5. Rashid, T., et al. 2019. Lipin-1 deficiency causes sarcoplasmic reticulum stress and chaperone-responsive myopathy. EMBO J. 38: e99576.
6. Song, L., et al. 2020. Proto-oncogene Src links lipogenesis via Lipin-1 to breast cancer malignancy. Nat. Commun. 11: 5842.
7. Deng, Z., et al. 2021. Low molecular weight fucoidan fraction LF2 improves metabolic syndrome via up-regulating PI3K-Akt-mTOR axis and increasing the abundance of *Akkermansia muciniphila* in the gut microbiota. Int. J. Biol. Macromol. 193: 789-798.
8. Wang, B., et al. 2022. Neddylation is essential for β-catenin degradation in Wnt signaling pathway. Cell Rep. 38: 110538.
9. Song, J., et al. 2024. Regulation of the Nur77-P2X7r signaling pathway by nodakenin: a potential protective function against alcoholic liver disease. Molecules 29: 1078.

RESEARCH USE

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

PROTOCOLS

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