SANTA CRUZ BIOTECHNOLOGY, INC.

ATGL (F-7): sc-365278

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The adiponutrin family members, which have been implicated in obesity and diabetes, consist of adiponutrin (ADPN), GS1, GS2, GS2-like, PNPLA1, and adipose triglyceride lipase (ATGL), also designated desnutrin or patatin-like phospholipase domain-containing protein 2 (PLNPA2). AGTL is a 486-amino acid protein that is highly expressed in mouse and human adipose tissue. It contains a highly conserved 180-amino acid N-terminal patatin domain common to plant acyl-hydrolases with a glycine-rich region, an aspartate active site motif, and an active serine hydrolase motif. Along with hormone-sensitive lipase, ATGL catabolizes stored triglycerides in mammalian adipose tissue. The lipase activity of AGTL is dependent upon the presence of an activated serine residue. ADPN and ATGL are oppositely regulated by Insulin, where upregulation of ATGl and downregulation of ADPN occurs when fasting.

CHROMOSOMAL LOCATION

Genetic locus: PNPLA2 (human) mapping to 11p15.5; Pnpla2 (mouse) mapping to 7 F5.

SOURCE

ATGL (F-7) is a mouse monoclonal antibody raised against amino acids 361-504 mapping at the C-terminus of ATGL 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.

ATGL (F-7) is available conjugated to agarose (sc-365278 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365278 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365278 PE), fluorescein (sc-365278 FITC), Alexa Fluor® 488 (sc-365278 AF488), Alexa Fluor® 546 (sc-365278 AF546), Alexa Fluor® 594 (sc-365278 AF594) or Alexa Fluor® 647 (sc-365278 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365278 AF680) or Alexa Fluor® 790 (sc-365278 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ATGL (F-7) is recommended for detection of ATGL 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 ATGL siRNA (h): sc-60223, ATGL siRNA (m): sc-60224, ATGL shRNA Plasmid (h): sc-60223-SH, ATGL shRNA Plasmid (m): sc-60224-SH, ATGL shRNA (h) Lentiviral Particles: sc-60223-V and ATGL shRNA (m) Lentiviral Particles: sc-60224-V.

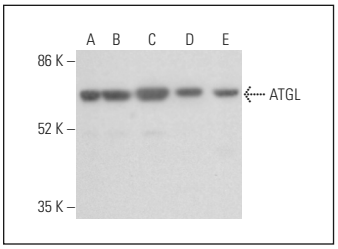
Molecular Weight of ATGL: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-673 cell lysate: sc-2414 or SJRH30 cell lysate: sc-2287.

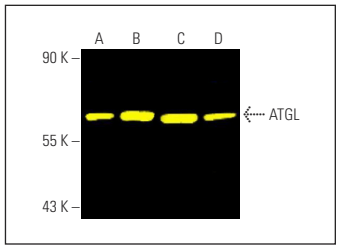
STORAGE

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

DATA



ATGL (F-7): sc-365278. Western blot analysis of ATGL expression in SJRH30 (**A**), HeLa (**B**), K-562 (**C**), 3T3-L1 (**D**) and A-673 (**E**) whole cell lysates.



ATGL (F-7) Alexa Fluor® 488: sc-365278 AF488. Direct fluorescent western blot analysis of ATGL expression in HeLa (**A**), A-673 (**B**), K-562 (**C**) and Y79 (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Famulla, S., et al. 2012. Differentiation of human adipocytes at physiological oxygen levels results in increased adiponectin secretion and isoproterenol-stimulated lipolysis. Adipocyte 1: 132-181.
2. Wang, Y., et al. 2013. The G_0/G_1 switch gene 2 is an important regulator of hepatic triglyceride metabolism. PLoS ONE 8: e72315.
3. Patsoukis, N., et al. 2015. PD-1 alters T-cell metabolic reprogramming by inhibiting glycolysis and promoting lipolysis and fatty acid oxidation. Nat. Commun. 6: 6692.
4. Kawabata, K., et al. 2016. Fatty acid β-oxidation plays a key role in regulating *cis*-palmitoleic acid levels in the liver. Biol. Pharm. Bull. 39: 1995-2008.
5. Schreiber, K.H., et al. 2019. A novel rapamycin analog is highly selective for mTORC1 *in vivo*. Nat. Commun. 10: 3194.
6. Huang, K.T., et al. 2020. Decreased PEDF promotes hepatic fatty acid uptake and lipid droplet formation in the pathogenesis of NAFLD. Nutrients 12: 270.
7. Sanhueza, S., et al. 2021. *Lampaya Medicinalis* Phil. decreases lipid-induced triglyceride accumulation and proinflammatory markers in human hepatocytes and fat body of *Drosophila melanogaster*. Int. J. Obes. 45: 1464-1475.
8. Zhong, R., et al. 2022. Nomegestrol acetate ameliorated adipose atrophy in a rat model of cisplatin-induced cachexia. Exp. Ther. Med. 25: 24.
9. Guo, R., et al. 2023. Monounsaturated fatty acid-enriched olive oil exacerbates chronic alcohol-induced hepatic steatosis and liver injury in C57BL/6J mice. Food Funct. 14: 1573-1583.

RESEARCH USE

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