

ATGL (E-12): sc-50220

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). ATGL 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 ATGL 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.

REFERENCES

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- Lake, A.C., et al. 2005. Expression, regulation, and triglyceride hydrolase activity of Adiponutrin family members. *J. Lipid. Res.* 46: 2477-2487.
- Gronke, S., et al. 2005. Brummer lipase is an evolutionary conserved fat storage regulator in *Drosophila*. *Cell Metab.* 1: 323-330.
- Raben, D.M., et al. 2005. A new lipase in regulating lipid mobilization: hormone-sensitive lipase is not alone. *Trends Endocrinol. Metab.* 16: 35-36.
- Kralisch, S., et al. 2005. Isoproterenol, TNF α , and Insulin downregulate adipose triglyceride lipase in 3T3-L1 adipocytes. *Mol. Cell. Endocrinol.* 240: 43-49.
- Smirnova, E., et al. 2006. ATGL has a key role in lipid droplet/adiposome degradation in mammalian cells. *EMBO Rep.* 7:106-113.

CHROMOSOMAL LOCATION

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

SOURCE

ATGL (E-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ATGL of mouse 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-50220 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ATGL (E-12) is recommended for detection of ATGL of mouse 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 ATGL siRNA (m): sc-60224, ATGL shRNA Plasmid (m): sc-60224-SH and ATGL shRNA (m) Lentiviral Particles: sc-60224-V.

Molecular Weight of ATGL: 47 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.

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.



Try **ATGL (F-7): sc-365278**, our highly recommended monoclonal alternative to ATGL (E-12).