

DGAT1 (H-255): sc-32861

BACKGROUND

Glucose and Insulin are anabolic signals which upregulate the transcriptions of a series of lipogenic enzymes to convert excess carbohydrate into triglycerides for efficient energy storage. Acyl-coenzyme A:diacylglycerol acyltransferase, also known as DGAT1 and ARGP1, is a microsomal enzyme that assists in the synthesis of fatty acids into triglycerides. DGAT catalyzes the terminal and only committed step in triacylglycerol synthesis by using diacylglycerol (DAG) and fatty acyl-CoA as substrates. DGAT plays a fundamental role in the metabolism of cellular diacylglycerol and is important in higher eukaryotes for physiologic processes involving triacylglycerol metabolism such as intestinal fat absorption, lipoprotein assembly, adipose tissue formation and lactation. DGAT1 is involved in fat absorption in the intestine and in basal level triglyceride synthesis in adipose tissue, where it is more highly expressed. Mice lacking DGAT1 have increased energy expenditure and therefore are resistant to obesity. In addition, mice lacking both copies of DGAT1 are completely devoid of milk secretion, most likely because of deficient triglyceride synthesis in the mammary gland.

CHROMOSOMAL LOCATION

Genetic locus: DGAT1 (human) mapping to 8q24.3; Dgat1 (mouse) mapping to 15 D3.

SOURCE

DGAT1 (H-255) is a rabbit polyclonal antibody raised against amino acids 1-100 mapping at the N-terminus of DGAT1 of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

DGAT1 (H-255) is recommended for detection of DGAT1 of human and, to a lesser extent, mouse and rat 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), immunohistochemistry (including paraffin-embedded sections) (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 DGAT1 siRNA (h): sc-40487, DGAT1 siRNA (m): sc-40488, DGAT1 siRNA (r): sc-72066, DGAT1 shRNA Plasmid (h): sc-40487-SH, DGAT1 shRNA Plasmid (m): sc-40488-SH, DGAT1 shRNA Plasmid (r): sc-72066-SH, DGAT1 shRNA (h), Lentiviral Particles: sc-40487-V, DGAT1 shRNA (m) Lentiviral Particles: sc-40488-V and DGAT1 shRNA (r) Lentiviral Particles: sc-72066-V.

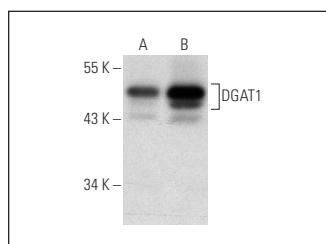
Molecular Weight of DGAT1: 55 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

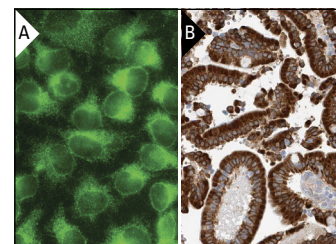
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



DGAT1 (H-255): sc-32861. Western blot analysis of DGAT1 expression in HeLa (A) and Hep G2 (B) whole cell lysates.



DGAT1 (H-255): sc-32861. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

- Qi, J., et al. 2010. High-content assays for evaluating cellular and hepatic diacylglycerol acyltransferase activity. *J. Lipid Res.* 51: 3559-3567.
- Meilin, E., et al. 2011. Insulin increases macrophage triglyceride accumulation under diabetic conditions through the down regulation of hormone sensitive lipase and adipose triglyceride lipase. *Biofactors* 37: 95-103.

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.



Try **DGAT1 (A-5): sc-271934** or **DGAT1 (G-6): sc-271935**, our highly recommended monoclonal alternatives to DGAT1 (H-255).