SANTA CRUZ BIOTECHNOLOGY, INC.

DGAT2 (4C1): sc-293211

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. DGAT1 catalyzes the terminal and only committed step in triacylglycerol synthesis by using diacylglycerol (DAG) and fatty acyl CoA as substrates. DGAT1 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 form-ation and lactation. DGAT2, which has no homology to DGAT1, differs from DGAT1 in that its activity has been shown to be inhibited by MgCl in an *in vitro* assay. DGAT2 is expressed primarily in liver and white adipose tissue, which suggests that it plays an important role in mammalian triglyceride metabolism.

CHROMOSOMAL LOCATION

Genetic locus: DGAT2 (human) mapping to 11q13.5; Dgat2 (mouse) mapping to 7 E2.

SOURCE

DGAT2 (4C1) is a mouse monoclonal antibody raised against amino acids 289-388 of DGAT2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DGAT2 (4C1) is recommended for detection of DGAT2 of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DGAT2 siRNA (h): sc-45520, DGAT2 siRNA (m): sc-45521, DGAT2 shRNA Plasmid (h): sc-45520-SH, DGAT2 shRNA Plasmid (m): sc-45521-SH, DGAT2 shRNA (h) Lentiviral Particles: sc-45520-V and DGAT2 shRNA (m) Lentiviral Particles: sc-45521-V.

Molecular Weight of DGAT2: 44 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or human stomach extract: sc-363780.

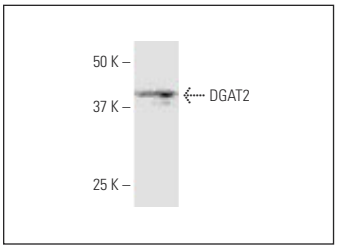
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

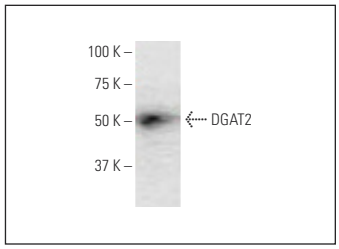
STORAGE

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

DATA



DGAT2 (4C1): sc-293211. Western blot analysis of DGAT2 expression in MCF7 whole cell lysate.



DGAT2 (4C1): sc-293211. Western blot analysis of DGAT2 expression in human stomach tissue extract.

SELECT PRODUCT CITATIONS

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3. Collins, H.E., et al. 2019. Novel role of the ER/SR Ca^{2+} sensor, STIM1, in regulation of cardiac metabolism. Am. J. Physiol. Heart Circ. Physiol. 316: H1014-H1026.
4. Chen, Y., et al. 2020. Mitochondrial aconitase controls adipogenesis through mediation of cellular ATP production. FASEB J. 34: 6688-6702.
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7. Lee, H., et al. 2022. Crosstalk between TM4SF5 and GLUT8 regulates fructose metabolism in hepatic steatosis. Mol. Metab. 58: 101451.
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RESEARCH USE

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