abcam

ab250080

Anti-DGAT1 antibody [EPR13430] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR13430
Purification technique	Affinity purification Protein A
Concentration	0.961 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information DGAT1

Function

Catalyzes the terminal and only committed step in triacylglycerol synthesis by using diacylglycerol and fatty acyl CoA as substrates (PubMed:16214399, PubMed:18768481, PubMed:28420705, PubMed:32433610, PubMed:32433611, PubMed:9756920). Highly expressed in epithelial cells of the small intestine and its activity is essential for the absorption of dietary fats (PubMed:18768481). In liver, plays a role in esterifying exogenous fatty acids to glycerol, and is required to synthesize fat for storage (PubMed:16214399). Also present in female mammary glands, where it produces fat in the milk (By similarity). May be involved in VLDL (very low density lipoprotein) assembly (PubMed:18768481). In contrast to DGAT2 it is not essential for survival (By similarity). Functions as the major acyl-CoA retinol acyltransferase (ARAT) in the skin, where it acts to maintain retinoid homeostasis and prevent retinoid toxicity leading to skin and hair disorders (PubMed:16214399). Exhibits additional acyltransferase activities, includin acyl CoA:monoacylglycerol acyltransferase (MGAT), wax monoester and wax diester synthases (By similarity). Also able to use 1-monoalkylglycerol (1-MAkG) as an acyl acceptor for the synthesis of monoalkyl-monoacylglycerol (MAMAG) (PubMed:28420705).

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab250080 is the carrier-free version of ab178711.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	DGAT1 also known as acyl CoA:diacylglycerol acyltransferase 1 is an enzyme with a molecular mass of approximately 55 kDa. DGAT1 is expressed in various tissues with high levels noted in adipose tissue and the intestines. The enzyme catalyzes the final step in triglyceride synthesis by transferring acyl-CoA to diacylglycerol to form triglycerides. This process is essential in lipid metabolism impacting both energy storage and membrane synthesis.

Biological function summary	DGAT1 plays a significant role in lipid homeostasis and energy balance across multiple biological systems. This enzyme is key in the conversion of dietary fats into stored energy and it does not exist as part of a complex. DGAT1's activity contributes to the maintenance of cellular lipid droplets and it has implications therefore in conditions where lipid metabolism is disrupted.
Pathways	DGAT1 is a part of the triglyceride biosynthesis pathway an important route within the lipid metabolism framework. In this context the enzyme works alongside other lipogenic proteins such as acetyl-CoA carboxylase and fatty acid synthase to synthesize triglycerides. DGAT1's role in this pathway has implications for how the body manages fat storage and utilization linking it to the regulation of systemic energy levels.
Associated diseases and disorders	Aberrant DGAT1 activity links to metabolic conditions such as obesity and type 2 diabetes. Alterations in DGAT1 expression can affect lipid storage and mobilization contributing to these disorders. Within this pathogenic context DGAT1 also interacts with proteins like adipose triglyceride lipase which further influences the breakdown of stored triglycerides impacting adipose tissue accumulation and insulin sensitivity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

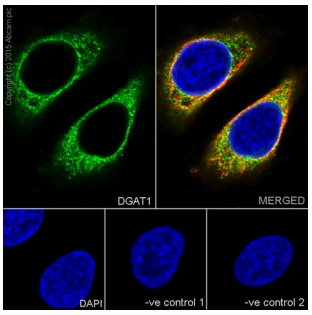
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

6 product images

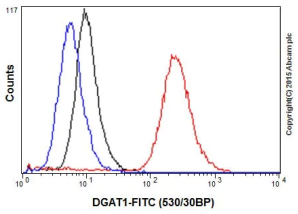


Immunocytochemistry/ Immunofluorescence - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling DGAT1 with ab178711 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HeLa cell line. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

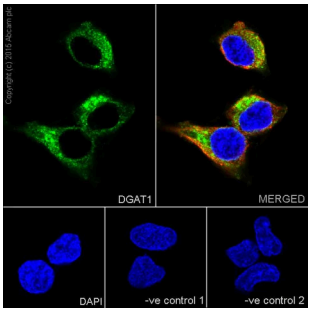
The negative controls are as follows:-
-ve control 1: ab178711 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Flow Cytometry (Intracellular) staining using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling DGAT1 with ab178711 at 1/250 dilution (red) compared with with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/500 dilution was used as the secondary antibody.

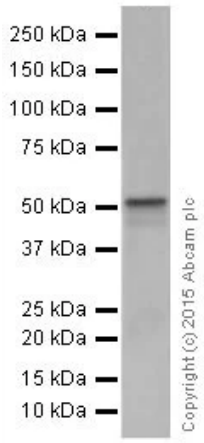


Immunocytochemistry/ Immunofluorescence - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293 (Human epithelial cells from embryonic kidney) cells labeling DGAT1 with ab178711 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HEK-293 cell line. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

The negative controls are as follows:-
-ve control 1: ab178711 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/1000 dilution.



Western blot - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Western blot staining of Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysate using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430] (ab178711) at 1/1000 dilution

All lanes:
Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysate at 20 µg

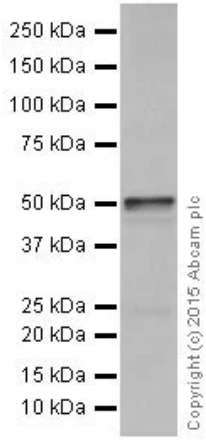
Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 3min



Western blot - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Western blot staining of HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430] (ab178711) at 1/1000 dilution

All lanes:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 20 µg

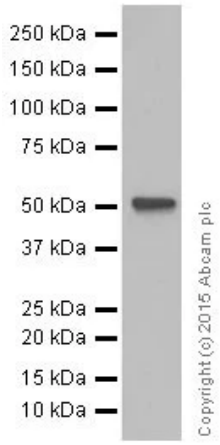
Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 18 kDa, 55 kDa

Observed band size: 18 kDa, 55 kDa

Exposure time: 30s



Western blot - Anti-DGAT1 antibody [EPR13430] - BSA and Azide free (ab250080)

DGAT1 Western blot staining of Human fetal kidney tissue lysate using rabbit Anti-DGAT1 antibody

This data was developed using ab178711, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430] (ab178711) at 1/5000 dilution

All lanes:
Human fetal kidney tissue lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 1min

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.