abcam

ab181180

Anti-DGAT1 antibody [EPR13430-4] - N-terminal

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR13430-4
Purification technique	Affinity purification Protein A
Concentration	0.4 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30 - 1/50
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/400
Notes	For unpurified use at 1/70 ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

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	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

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

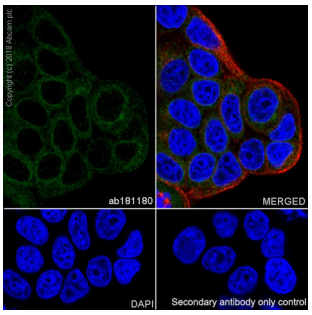
We do not recommend this combination. It is not covered by our product promise.

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.

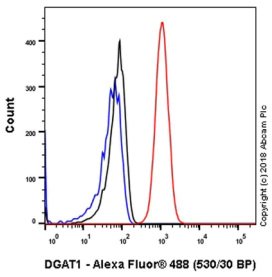
10 product images



Immunocytochemistry/ Immunofluorescence - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

DGAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DGAT1 antibody

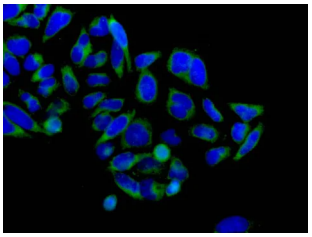
Immunocytochemistry/ Immunofluorescence analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling DGAT1 with Purified ab181180 at 1:100 dilution (4.3 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

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

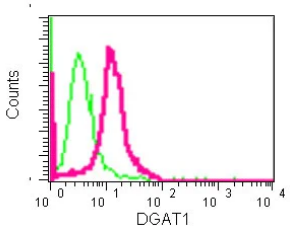
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling DGAT1 with Purified ab181180 at 1/400 dilution (1µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

DGAT1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DGAT1 antibody

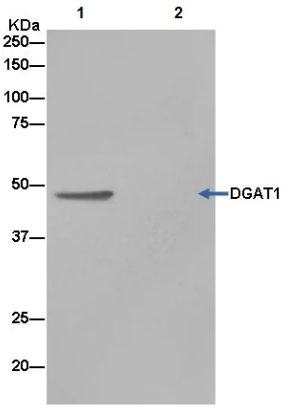
Immunofluorescence analysis of acetone-fixed HeLa cells, staining DGAT1 (green) with ab181180 at 1/100 dilution. Alexa Fluor®488-conjugated goat anti rabbit IgG was used as a secondary antibody at 1/200 dilution. Nuclei were counterstained with DAPI (blue).



Flow Cytometry (Intracellular) - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

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

Intracellular Flow Cytometry analysis of DGAT1 expression in HeLa cells using ab181180 at 1/70 dilution (red) and a rabbit IgG as negative control (green).

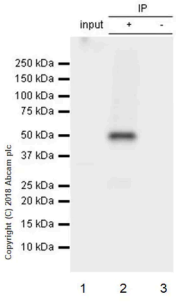


Immunoprecipitation - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

Western blot analysis on immunoprecipitation pellet from Human fetal kidney lysate (lane 1) or negative control (lane 2), labeling DGAT1 immunoprecipitated using ab181180 at 1/1500 dilution and HRP-conjugated anti-rabbit IgG preferentially detecting the non-reduced form of rabbit IgG.
All lanes:
Immunoprecipitation - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

Predicted band size: 55 kDa

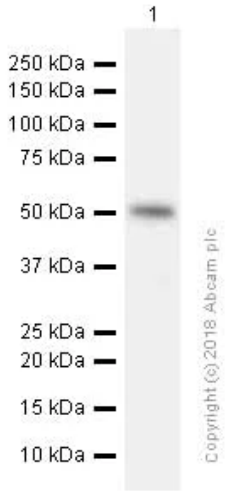
Observed band size: 55 kDa



Immunoprecipitation - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

ab181180 (purified) at 1:30 dilution (2µg) immunoprecipitating DGAT1 in Human fetal kidney lysate.
Lane 1 (input): Human fetal kidney lysate 10µg
Lane 2 (+): ab181180 & Human fetal kidney lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab181180 in Human fetal kidney lysate
For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1:1000 dilution.
Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

Predicted band size: 55 kDa



Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

DGAT1 Western blot staining of Human small intestine tissue lysate using rabbit Anti-DGAT1 antibody

Blocking buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180) at 1/10000 dilution

All lanes:
Human small intestine tissue lysate at 20 µg

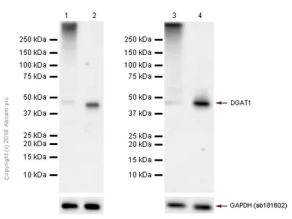
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/20000 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 3min



Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

DGAT1 Western blot staining using rabbit Anti-DGAT1 antibody

Blocking buffer and concentration: 5% NFDM/TBST
We recommend to use 1% SDS Hot lysis method to get clear Western Blot results.

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180) at 1/10000 dilution

Lane 1:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate prepared using RIPA lysis method at 20 µg

Lane 2:
HEK-293 whole cell lysate prepared using 1% SDS Hot lysis method at 20 µg

Lane 3:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate prepared using RIPA lysis method at 20 µg

Lane 4:
Jurkat whole cell lysate prepared using 1% SDS Hot lysis method at 20 µg

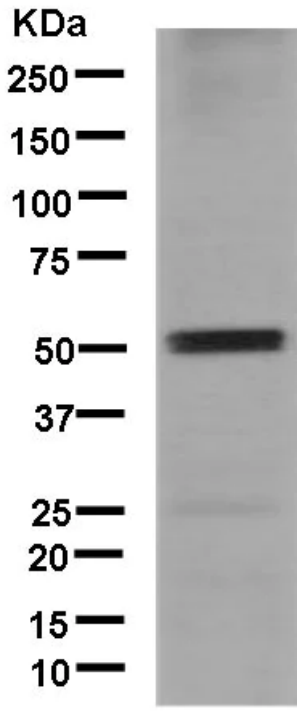
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/20000 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 3s



Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180) at 1/50000 dilution

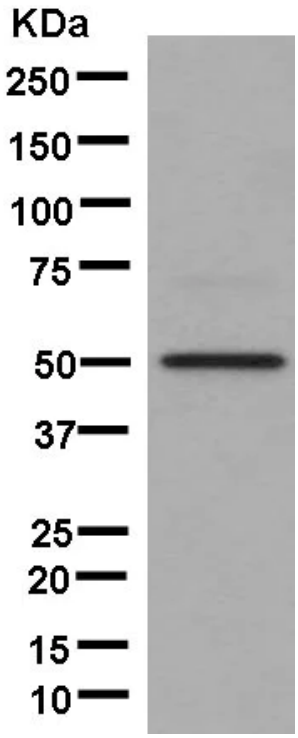
All lanes:
HeLa cell lysate at 10 µg

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



Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180)

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

All lanes:
Western blot - Anti-DGAT1 antibody [EPR13430-4] - N-terminal (ab181180) at 1/10000 dilution

All lanes:
Human fetal kidney lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab136636) at 1/500 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa

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