abcam

ab19862

Anti-SCD1 antibody [CD.E10]

Anti-SCD1 antibody [CD.E10] (ab19862) is a mouse monoclonal antibody detecting SCD1 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Over 80 publications
- Trusted since 2005

KO Validated

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.2 Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human SCD. Database link O00767
Clone number	CD.E10
Purification technique	Affinity purification Protein A
Specificity	This SCD1 antibody can bind to SCD5 very weakly in WB when SCD5 is overexpressed (<10% cross-reactivity).
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Protein A affinity chromatography

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human

Dilution info	4 µg/mL
Notes	-

Target data

See full target information SCD

Function	Stearoyl-CoA desaturase that utilizes O(2) and electrons from reduced cytochrome b5 to introduce the first double bond into saturated fatty acyl-CoA substrates (PubMed:15907797, PubMed:18765284). Catalyzes the insertion of a cis double bond at the delta-9 position into fatty acyl-CoA substrates including palmitoyl-CoA and stearoyl-CoA (PubMed:15907797, PubMed:18765284). Gives rise to a mixture of 16:1 and 18:1 unsaturated fatty acids (PubMed:15610069). Plays an important role in lipid biosynthesis. Plays an important role in regulating the expression of genes that are involved in lipogenesis and in regulating mitochondrial fatty acid oxidation (By similarity). Plays an important role in body energy homeostasis (By similarity). Contributes to the biosynthesis of membrane phospholipids, cholesterol esters and triglycerides (By similarity).

Storage

Shipped at conditions	Blue Ice
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

What is this antibody validated in?
Anti-SCD1 antibody [CD.E10] (ab19862) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of SCD1?
Anti-SCD1 [CD.E10] (ab19862) specifically detects a band for SCD1 (UniProt: O00767) at a molecular weight of 42kDa.

Trusted by the scientific community
Anti-SCD1 [CD.E10] (ab19862) was first used in a scientific publication in 2005 and has been cited over 80 times in peer-reviewed journals.

Reviewed by scientists
Anti-SCD1 [CD.E10] (ab19862) has over 5 independent reviews from customers.

Specificity confirmed
The specificity of Anti-SCD1 antibody [CD.E10] (ab19862) has been confirmed by Western blot testing in SCD Knockout HeLa cell line, ab265220.

Supplementary info

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

Activity summary	Stearoyl-CoA desaturase-1 (SCD1) also known as delta-9-desaturase is an enzyme integral to the synthesis of monounsaturated fats. This enzyme converts saturated fatty acyl-CoAs to monounsaturated fatty acyl-CoAs by introducing a double bond between the ninth and tenth carbon atoms a process called desaturation. SCD1 has a molecular weight of approximately 45 kDa and expresses in a variety of tissues including the liver adipose tissue and heart.
Biological function summary	SCD1 plays a significant role in fatty acid metabolism by regulating the balance of saturated and unsaturated fatty acids which impacts membrane fluidity and cellular signaling. SCD1 does not function as part of a multi-protein complex acting independently in the endoplasmic reticulum. Its expression and activity influence lipid biosynthesis and storage affecting energy homeostasis and lipid composition in cells.
Pathways	Fatty acid synthesis and oxidation pathways extensively involve SCD1. It participates mainly in the lipogenesis pathway interacting with proteins like acetyl-CoA carboxylase (ACC) and fatty acid synthase (FAS). SCD1 contributes to maintaining the ratio of oleate and palmitoleate key monounsaturated fatty acids important for cellular functions by integrating into the lipid metabolism network.
Associated diseases and disorders	SCD1 is implicated in conditions like obesity and metabolic syndrome. Altered SCD1 activity links to insulin resistance as seen in obesity by modulating lipid profiles that influence insulin sensitivity. SCD1 associates with proteins like peroxisome proliferator-activated receptor gamma (PPARγ) which regulates adipogenesis emphasizing its role in metabolic disorders.

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.

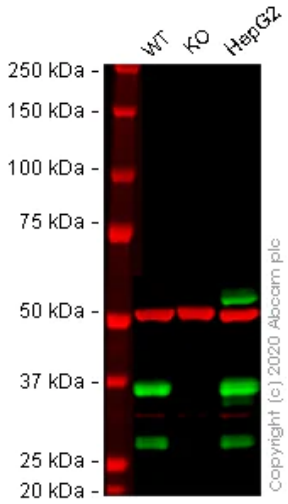
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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6 product images



Western blot - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD1 Western blot staining using mouse Anti-SCD1 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab19862 observed at 36 kDa. Red - loading control ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) observed at 55kDa.
ab19862 was shown to react with SCD1 in wild-type HeLa cells in western blot with loss of signal observed in SCD knockout cell line ab265220 (SCD knockout cell lysate ab257658). Wild-type and SCD knockout HeLa cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab19862 and ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-SCD1 antibody [CD.E10] (ab19862) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

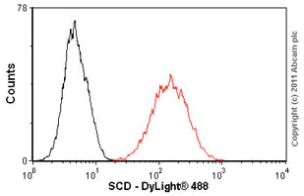
Lane 2:
Western blot - Human SCD (SCD1) knockout HeLa cell lysate (ab257658) at 20 µg

Lane 3:
HepG2 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 42 kDa

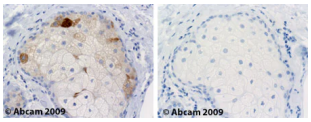
Observed band size: 36 kDa



Flow Cytometry - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD1 Flow Cytometry staining using mouse Anti-SCD1 antibody

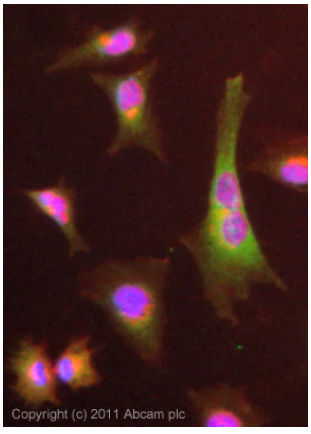
Overlay histogram showing HepG2 cells stained with ab19862 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab19862, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HepG2 cells fixed with 80% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-SCD1 antibody

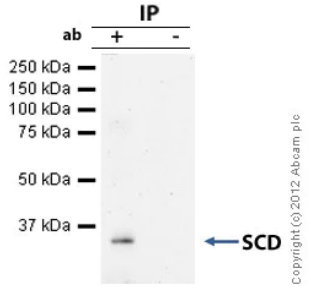
ab19862 staining SCD in human skin.
Left panel: with primary antibody at 4 ug/ml. Right panel: isotype control.
Sections were stained using an automated system (DAKO Autostainer Plus), at room temperature: sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffers EDTA pH 9.0. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 mins. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 min and detected with Dako envision flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.



Immunocytochemistry - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD1 Immunocytochemistry staining using mouse Anti-SCD1 antibody

ICC/IF image of ab19862 stained HeLa cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab19862, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

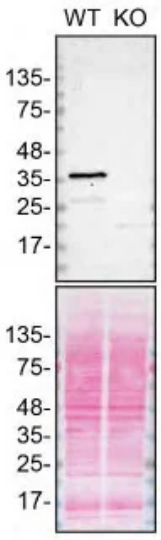


Immunoprecipitation - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD was immunoprecipitated using 0.5mg Hek293 whole cell extract, 10µg of Mouse monoclonal to SCD and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).
The antibody was incubated under agitation with Protein G beads for 10min, Hek293 whole cell extract lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70ºC; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab19862.
Secondary: Goat polyclonal to mouse IgG light chain specific (HRP) at 1/5000 dilution.
Band: 32kDa; SCD.
All lanes:
Immunoprecipitation - Anti-SCD1 antibody [CD.E10] (ab19862)

Predicted band size: 42 kDa



Western blot - Anti-SCD1 antibody [CD.E10] (ab19862)

SCD1 Western blot staining using mouse Anti-SCD1 antibody

ab19862 was shown to react with SCD1 in wild-type HeLa cells in Western blot with loss of signal observed in SCD1 knockout cell line ab265220. Wild-type HeLa and SCD1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab19862 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-SCD1 antibody [CD.E10] (ab19862) at 1/1000 dilution

Lane 1:
Wild-type HeLa lysate at 35 µg

Lane 2:
SCD1 knock-out HeLa lysate at 35 µg

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