abcam

ab202582

Anti-SUCLA2 antibody [EPR14924]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR14924
Purification technique	Affinity purification Protein A
Concentration	0.928 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat

Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1800
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/200
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1800
Notes	-

Species	Rat
Dilution info	1/1800
Notes	-

Species	Human
Dilution info	1/1800
Notes	-

Target data

See full target information Succinate--CoA ligase [ADP-forming] subunit beta, mitochondrial

Function	ATP-specific succinyl-CoA synthetase functions in the citric acid cycle (TCA), coupling the hydrolysis of succinyl-CoA to the synthesis of ATP and thus represents the only step of substrate-level phosphorylation in the TCA (PubMed:15877282, PubMed:34492704, PubMed:40108300). The beta subunit provides nucleotide specificity of the enzyme and binds the substrate succinate, while the binding sites for coenzyme A and phosphate are found in the alpha subunit (By similarity). Also able to act as an ATP-specific itaconyl- and malyl-CoA synthetase (PubMed:40108300).

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	SUCLA2 also known as succinate-CoA ligase (ADP-forming) subunit beta is an enzyme with a molecular mass of approximately 48 kDa. It plays an important role in the mitochondrial matrix where it participates in the citric acid cycle. The enzyme is found in various tissues with higher expression in muscle and brain tissues. SUCLA2 functions as part of the succinyl-CoA synthetase complex which catalyzes the reversible conversion of succinyl-CoA to succinate with the concurrent substrate-level phosphorylation of GDP to GTP or ADP to ATP depending on tissue type.
Biological function summary	The SUCLA2 subunit is essential for energy metabolism. It forms a component of the succinyl-CoA synthetase complex working with the alpha subunit SUCLG1. This complex supports the provision of energy by converting GDP to GTP in processes needing high energy levels critical for maintaining cellular homeostasis. Therefore it especially supports tissues with high energy demands. The action of SUCLA2 links energy production with the metabolic pathways involved in cellular respiration.
Pathways	SUCLA2 plays a critical role in the citric acid cycle also known as the Krebs cycle. Part of this cycle SUCLA2 contributes to cellular respiration and energy production. The SUCLA2 protein closely interacts with SUCLG1 to form the functional succinyl-CoA synthetase enzyme. Additionally it shows connections to the electron transport chain where the products of its catalysis are used in ATP generation. Defects in these pathways can have widespread effects on cellular energy states and mitochondrial function.
Associated diseases and disorders	SUCLA2 mutations are linked to mitochondrial DNA depletion syndromes particularly myopathy and encephalopathy. These conditions lead to severe energy metabolism impairments due to faulty mitochondrial function. SUCLA2 has also been associated with Leigh syndrome a neurodegenerative disorder marked by

compromised cellular respiration. Such disorders point towards deficient ATP synthesis highlighting the interconnected role of SUCLA2 with other mitochondrial proteins involved in cellular energy metabolism.

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

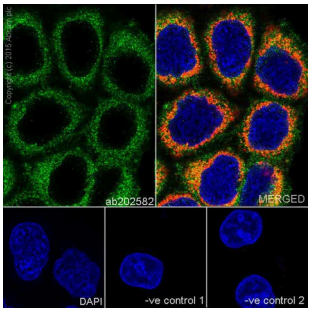
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images

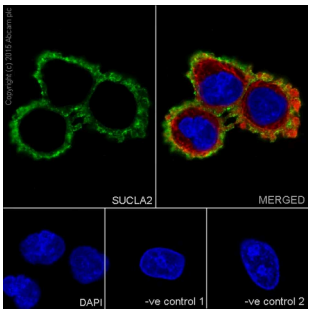


Immunocytochemistry/ Immunofluorescence - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SUCLA2 antibody

Immunofluorescent analysis of 100% methanol-fixed 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling SUCLA2 with ab202582 at 1/1800 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). Confocal image showing cytoplasm staining on HeLa cell line. The nuclear counter stain is DAPI (blue). COX IV is detected with ab33985 (anti-COX IV mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat Anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:
-ve control 1: ab202582 at 1/1800 dilution followed by ab150120 (AlexaFluor®594 Goat Anti-Mouse secondary) at 1/500 dilution.

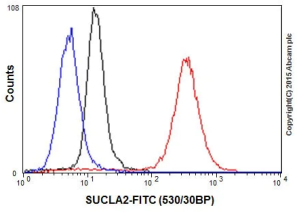
-ve control 2: ab33985 (Anti-COX IV mouse MAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SUCLA2 antibody

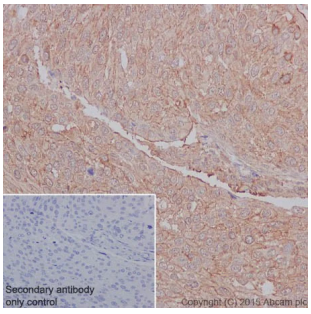
Immunofluorescent analysis of 100% methanol-fixed 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling SUCLA2 with ab202582 at 1/1800 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). The nuclear counter stain 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 1/500 dilution (red).
The negative controls are as follows:
-ve control 1: ab202582 at 1/1800 dilution followed by ab150120 (AlexaFluor®594 Goat Anti-Mouse secondary) at 1/500 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 1/500 dilution.



Flow Cytometry (Intracellular) - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Flow Cytometry (Intracellular) staining using rabbit Anti-SUCLA2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling SUCLA2 with ab202582 at 1/200 dilution (red) compared 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.

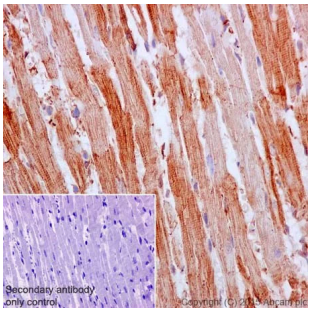


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUCLA2 antibody

Immunohistochemical analysis of paraffin-embedded Human cervix carcinoma tissue labeling SUCLA2 with ab202582 at 1/1800 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on Human cervix carcinoma tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

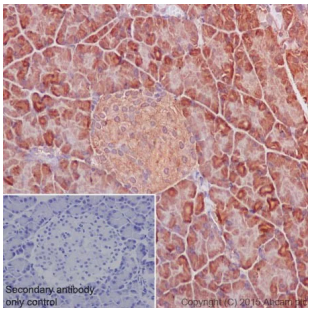


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUCLA2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labeling SUCLA2 with ab202582 at 1/1800 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on mouse cardiac muscle tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

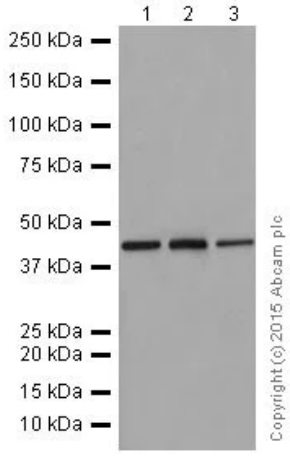


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUCLA2 antibody

Immunohistochemical analysis of paraffin-embedded rat pancreas tissue labeling SUCLA2 with ab202582 at 1/1800 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on rat pancreas tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Western blot staining using rabbit Anti-SUCLA2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-SUCLA2 antibody [EPR14924] (ab202582) at 1/1000 dilution

Lane 1:
293 (Human epithelial cells from embryonic kidney) whole cell lysate at 10 µg

Lane 2:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 10 µg

Lane 3:
HepG2 (Human liver hepatocellular carcinoma) whole cell lysate at 10 µg

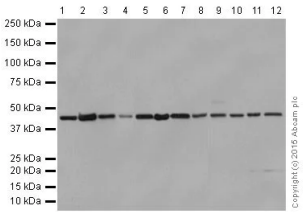
Secondary

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

Predicted band size: 50 kDa

Observed band size: 43 kDa

Exposure time: 1min



Western blot - Anti-SUCLA2 antibody [EPR14924] (ab202582)

SUCLA2 Western blot staining using rabbit Anti-SUCLA2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-SUCLA2 antibody [EPR14924] (ab202582) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse heart lysate at 10 µg

Lane 3:
Mouse kidney lysate at 10 µg

Lane 4:
Mouse spleen lysate at 10 µg

Lane 5:
Rat brain lysate at 10 µg

Lane 6:
Rat heart lysate at 10 µg

Lane 7:
Rat kidney lysate at 10 µg

Lane 8:
Rat spleen lysate at 10 µg

Lane 9:
C6 (Rat glial tumor cells) whole cell lysate at 10 µg

Lane 10:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 11:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

Lane 12:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 50 kDa

Observed band size: 43 kDa

Exposure time: 15s

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