abcam

ab40793

Anti-ATP citrate lyase antibody [EP704Y]

Anti-ATP citrate lyase antibody [EP704Y] (ab40793) is a rabbit monoclonal antibody detecting ATP citrate lyase in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 60 publications
- Trusted since 2006

Recombinant | RabMAb | KO Validated | 20ul selling size

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	EP704Y
Purification technique	Affinity purification Protein A
Specificity	This antibody recognises ATP citrate lyase (ACL). The mouse and rat recommendation is based on the WB results. We do not guarantee IHC-P for mouse and rat.
Concentration	0.249 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/20
Notes	-

Expected

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

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/10000
Notes	**For unpurified use at 1/1000 - 1/5000.**

Species	Rat
Dilution info	1/10000
Notes	**For unpurified use at 1/1000 - 1/5000.**

Species	Human
Dilution info	1/10000
Notes	**For unpurified use at 1/1000 - 1/5000.**

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Notes	-

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30 - 1/6225
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified use at 1/100.

Expected

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

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

Target data

See full target information ATP-citrate synthase

Function	Catalyzes the cleavage of citrate into oxaloacetate and acetyl-CoA, the latter serving as common substrate in multiple biochemical reactions in protein, carbohydrate and lipid metabolism.

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

What is this antibody validated in?
Anti-ATP citrate lyase antibody [EP704Y] (ab40793) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of ATP citrate lyase?
Anti-ATP citrate lyase [EP704Y] (ab40793) specifically detects a band for ATP citrate lyase (UniProt: P53396) at a molecular weight of 122kDa.

Trusted by the scientific community
Anti-ATP citrate lyase [EP704Y] (ab40793) was first used in a scientific publication in 2006 and has been cited over 60 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-ATP citrate lyase antibody [EP704Y] (ab40793) has been confirmed by Western blot testing in ATP citrate lyase Knockout HAP1 cells.

Other related products
We have a range of other formats of antibody clone [EP704Y] also available for your convenience: ab40793, Alexa Fluor® 488 - ab205429, Alexa Fluor® 647 - ab205430, PE - ab209750, Carrier free - ab227996

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	ATP citrate lyase (ACL ACLY) is an enzyme responsible for converting citrate and coenzyme A into acetyl-CoA and oxaloacetate using ATP in the process. This reaction is key for lipid and cholesterol biosynthesis. ACLY's alternate name is ATP citrate (pro-S)-lyase and it has a molecular weight of approximately 120 kDa. The enzyme is expressed mainly in the cytoplasm with substantial amounts found in liver and adipose tissues.
Biological function summary	ATP citrate lyase plays an important role in lipid metabolism and energy production. It drives the conversion of citrate-derived acetyl-CoA a central metabolite in lipogenesis providing substrates for fatty acid and cholesterol synthesis. ACLY functions as a homotetramer complex to facilitate its enzymatic activity. This mechanism supports energy homeostasis linking carbohydrate metabolism with lipid biosynthesis.
Pathways	The enzyme ATP citrate lyase is instrumental in the citric acid cycle and fatty acid synthesis pathways. It is a central player in the cholesterol biosynthesis pathway which tightly connects to acetyl-CoA and citrate shuttle processes. In these pathways it interacts functionally with other enzymes such as acetyl-CoA carboxylase which further processes acetyl-CoA into malonyl-CoA serving as a precursor for fatty acid elongation.
Associated diseases and disorders	ATP citrate lyase becomes significant in metabolic syndrome and cancer. Elevated expression and activity are linked to an increased risk of metabolic diseases including obesity and type 2 diabetes due to its role in excessive lipid accumulation. Moreover cancer cells often exhibit upregulated ACLY activity encouraging tumor growth by supplying acetyl-CoA for lipid biosynthesis. Its activity is intricately linked to proteins such as fatty acid synthase which also contribute to altered lipid profiles in these conditions.

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.

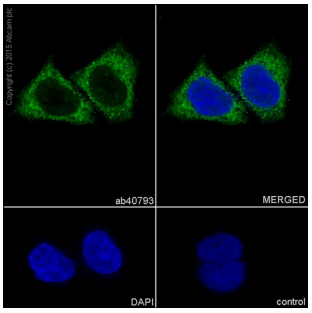
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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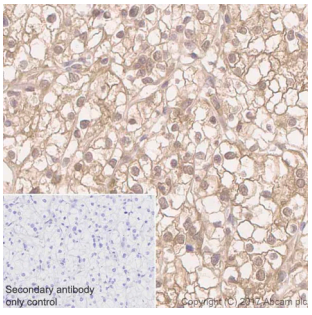
14 product images



Immunocytochemistry/ Immunofluorescence - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ATP citrate lyase antibody

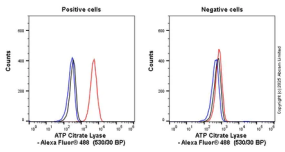
Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling ATP citrate lyase with purified ab40793 at 1/50. Cells were fixed with 100% methanol. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody.
Control: PBS only.
Nuclear counter stain: DAPI.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human clear cell carcinoma of kidney tissue sections labeling ATP citrate lyase with Purified ab40793 at 1:100 dilution. Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.



Flow Cytometry (Intracellular) - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Flow Cytometry (Intracellular) staining using rabbit Anti-ATP citrate lyase antibody

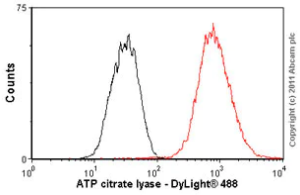
Flow cytometry overlay histogram showing left wild-type HAP1 positive cells and right negative ACLY knockout HAP1 stained with ab40793 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab40793) (1x 10^6 in 100µl at 0.04 µg/ml (1/6225 dilution)) for 30min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 dilution for 30min at 22°C.

Isotype control antibody was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (black line) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

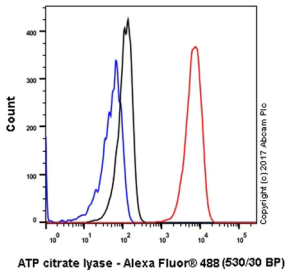
This antibody gave a positive signal in wild-type HAP1 fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min under the same conditions.



Flow Cytometry (Intracellular) - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Flow Cytometry (Intracellular) staining using rabbit Anti-ATP citrate lyase antibody

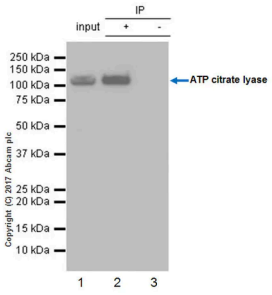
Overlay histogram showing HeLa cells stained withunpurified ab40793 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab40793, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Flow Cytometry (Intracellular) - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Flow Cytometry (Intracellular) staining using rabbit Anti-ATP citrate lyase antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling ATP citrate lyase with purified ab40793 at 1/30 dilution (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



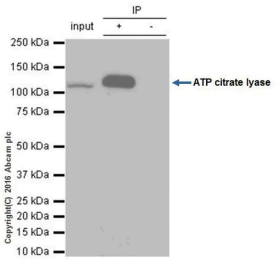
Immunoprecipitation - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ab40793 (purified) at 1:20 dilution (1.5µg) immunoprecipitating ATP citrate lyase in HeLa whole cell lysate.

Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate,10µg
Lane 2 (+): ab40793 & HeLa whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab40793 in HeLa whole cell 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-ATP citrate lyase antibody [EP704Y] (ab40793)

Predicted band size: 120 kDa



Immunoprecipitation - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ab40793 at 1/40 immunoprecipitating ATP citrate lyase in HeLa (human cervix adenocarcinoma) whole cell lysate.
Lane 1 (input): HeLa (human cervix adenocarcinoma) whole cell lysate 10µg

Lane 2 (+): ab40793 + HeLa (human cervix adenocarcinoma) whole cell lysate

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab40793 in HeLa (human cervix adenocarcinoma) whole cell lysate

For western blotting, ab40793 at 1/1000 dilution and ab131366 VeriBlot for IP (HRP) was used as the secondary antibody at 1/10000.

Blocking buffer and concentration: 5% NFDM/TBST.

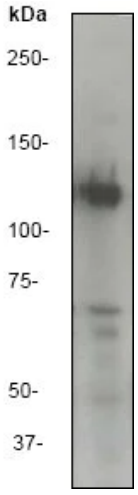
Diluting buffer and concentration: 5% NFDM /TBST.

All lanes:
Immunoprecipitation - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

Predicted band size: 120 kDa

Observed band size: 122 kDa

Exposure time: 10s



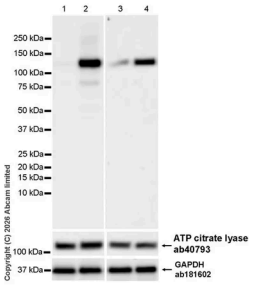
Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

All lanes:
Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793) at 1/5000 dilution

All lanes:
HeLa cell lysate

Predicted band size: 120 kDa

Observed band size: 122 kDa



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Western blot staining using rabbit Anti-ATP citrate lyase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) (1:200000) (36KDa).

All lanes:
Western blot - Anti-ATP citrate lyase (phospho S455) antibody [EPR31107-40] (ab327419) at 1/1000 dilution

Lane 1:
Untreated HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa treated with 100ng/ml Calyculin A for 30 min whole cell lysate at 20 µg

Lane 3:
Untreated NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

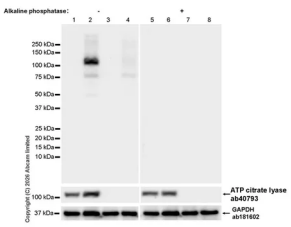
Lane 4:
NIH/3T3 treated with 50ng/ml Platelet-Derived Growth Factor-BB for 60 min whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 125 kDa, 36 kDa

Exposure time: 125s



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Western blot staining using rabbit Anti-ATP citrate lyase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, ab327419 was shown to bind specifically to ATP citrate lyase (phospho S455). Target of interest was observed at 125 kD wild-type HAP1 cell lysates (lanes 1-2) with no signal observed at this size in ACLY knockout cell line (lanes 3-4) .

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) (1:200000) (36KDa).
All lanes:
Western blot - Anti-ATP citrate lyase (phospho S455) antibody [EPR31107-40] (ab327419) at 1/1000 dilution

Lane 1:
Untreated Wild-type HAP1 (human chronic myelogenous leukemia near-haploid cell) whole cell lysate (untreated membrane) at 20 µg

Lane 2:
Wild-type HAP1 treated with 100ng/ml Calyculin A for 30min whole cell lysate (untreated membrane) at 20 µg

Lane 3:
ACLY knockout HAP1 whole cell lysate (untreated membrane) at 20 µg

Lane 4:
ACLY knockout HAP1 treated with 100ng/ml Calyculin A for 30min whole cell lysate (untreated membrane) at 20 µg

Lane 5:
Untreated Wild-type HAP1 (human chronic myelogenous leukemia near-haploid cell) whole cell lysate (alkaline phosphatase treated membrane) at 20 µg

Lane 6:
Wild-type HAP1 treated with 100ng/ml Calyculin A for 30min whole cell lysate (alkaline phosphatase treated membrane) at 20 µg

Lane 7:
ACLY knockout HAP1 whole cell lysate (alkaline phosphatase treated membrane) at 20 µg

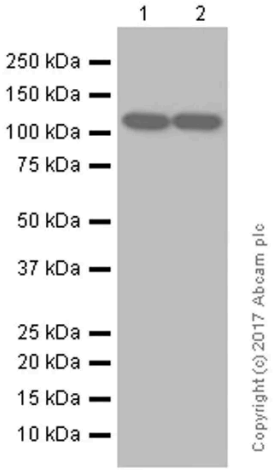
Lane 8:
ACLY knockout HAP1 treated with 100ng/ml Calyculin A for 30min whole cell lysate (alkaline phosphatase treated membrane) at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 125 kDa, 36 kDa

Exposure time: 3s



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Western blot staining using rabbit Anti-ATP citrate lyase antibody

Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793) at 1/50000 dilution

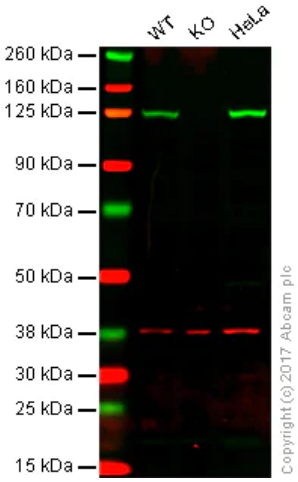
Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 20 µg

Lane 2:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 120 kDa



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

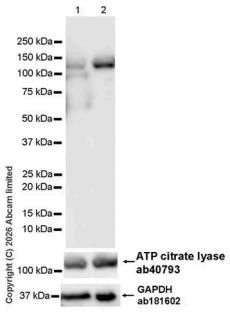
ATP citrate lyase Western blot staining using rabbit Anti-ATP citrate lyase antibody

Lane 1: Wild-type HAP1 whole cell lysate (20 µg)
Lane 2: ATP citrate lyase knockout HAP1 whole cell lysate (20 µg)
Lane 3: HeLa whole cell lysate (20 µg)
Lanes 1 - 3: Merged signal (red and green). Green - ab40793 observed at 125 kDa. Red - loading control, ab9484, observed at 37 kDa.

Unpurified ab40793 was shown to specifically react with ATP citrate lyase in wild-type HAP1 cells as signal was lost in ATP citrate lyase knockout cells. Wild-type and ATP citrate lyase knockout samples were subjected to SDS-PAGE. ab40793 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

Predicted band size: 120 kDa



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Western blot staining of HepG2 treated with 150nM Insulin for 15 min whole cell lysate using rabbit Anti-ATP citrate lyase antibody

Blocking buffer and concentration: 1% BSA/TBST
Diluting buffer and concentration: 5% NFDM/TBST

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) (1:200000) (36KDa).

All lanes:
Western blot - Anti-ATP citrate lyase (phospho S455) antibody [EPR31107-40] (ab327419) at 1/1000 dilution

Lane 1:
Untreated HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

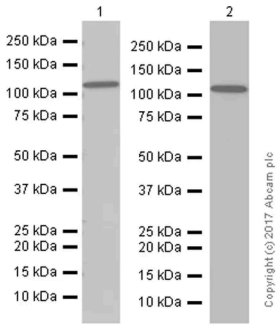
Lane 2:
HepG2 treated with 150nM Insulin for 15 min whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 125 kDa, 36 kDa

Exposure time: 125s



Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793)

ATP citrate lyase Western blot staining using rabbit Anti-ATP citrate lyase antibody

Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ATP citrate lyase antibody [EP704Y] (ab40793) at 1/10000 dilution

Lane 1:
Rat lung lysates at 15 µg

Lane 2:
C6 (Rat glial tumor glial cell) whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 120 kDa

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