abcam

ab205429

Alexa Fluor® 488 Anti-ATP citrate lyase antibody [EP704Y]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% 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	ab205429 recognises ATP citrate lyase (ACL).
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/500
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	1/12500
Notes	-

Expected

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

Predicted

Species	Common marmoset
Dilution info	-
Notes	-

IHC-P

Expected

Species	Human, 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	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, Store in the dark

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.

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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

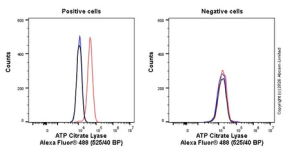
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images



Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-ATP citrate lyase antibody [EP704Y] (ab205429)

ATP citrate lyase Flow Cytometry (Intracellular) staining of wild-type HAP1 cell line using rabbit Anti-ATP citrate lyase antibody

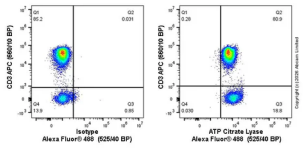
Flow cytometry overlay histogram showing left wild-type HAP1 positive cells and right negative ACLY knockout HAP1 stained with ab205429 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab205429) (1x 10^6 in 100µl at 0.04 µg/ml (1/12500)) for 30min at 22°C.

Isotype control antibody was Alexa Fluor® 488 Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab199091) (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 525/40 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.

This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.



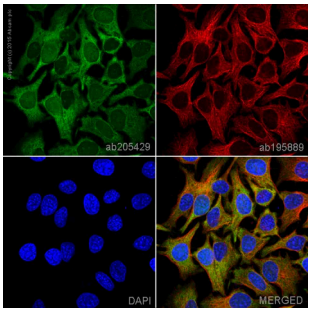
Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-ATP citrate lyase antibody [EP704Y] (ab205429)

ATP citrate lyase Flow Cytometry (Intracellular) staining of Human peripheral mononuclear cells (PBMCs) using rabbit Anti-ATP citrate lyase antibody

Flow cytometry scatter plots showing human peripheral mononuclear cells (PBMCs) stained with ab205429 (right) or isotype control (left). The cells were fixed and permeabilised using BD CytoFix/CytoPerm™ (20 min). The cells were incubated in 1x PBS containing 10µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab205429) (1x 10^6 in 100µl at 0.2 µg/ml (1/2500)) for 30min on ice. Alexa Fluor® 488 Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab199091) (left). The cells were simultaneously stained with CD3.

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-ATP citrate lyase antibody [EP704Y] (ab205429)

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

ab205429 staining ATP citrate lyase in HeLa cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab205429 at 1/500 dilution (shown in green) and ab195889, Mouse monoclonal [DM1A] to alpha Tubulin (Alexa Fluor® 594), at 2µg/ml (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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