abcam

ab196198

Alexa Fluor® 647 Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker

Anti-ATP5A antibody [EPR13030(B)] - Alexa Fluor® 647 conjugated (ab196198) is a rabbit recombinant monoclonal antibody detecting ATP5A in **Flow Cytometry (Intra), ICC/IF**. Suitable for **Human**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
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	EPR13030(B)
Purification technique	Affinity purification Protein A
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	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	ab199093 - Rabbit monoclonal IgG (Alexa Fluor®; 647), is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Expected

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

Target data

See full target information ATP5F1A

Function	Subunit alpha, of the mitochondrial membrane ATP synthase complex (F(1)F(0) ATP synthase or Complex V) that produces ATP from ADP in the presence of a proton gradient across the membrane which is generated by electron transport complexes of the respiratory chain (Probable). ATP synthase complex consist of a soluble F(1) head domain - the catalytic core - and a membrane F(1) domain - the membrane proton channel (PubMed:37244256). These two domains are linked by a central stalk rotating inside the F(1) region and a stationary peripheral stalk (PubMed:37244256). During catalysis, ATP synthesis in the catalytic domain of F(1) is coupled via a rotary mechanism of the central stalk subunits to proton translocation (Probable). In vivo, can only synthesize ATP although its ATP hydrolase activity can be activated artificially in vitro (By similarity). With the catalytic subunit beta (ATP5F1B), forms the catalytic core in the F(1) domain (PubMed:37244256). Subunit alpha does not bear the catalytic high-affinity ATP-binding sites (Probable). Binds the bacterial siderophore enterobactin and can promote mitochondrial accumulation of enterobactin-derived iron ions (PubMed:30146159).

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, Stable for 12 months at -20°C, Store in the dark

Notes

What is this antibody validated in?
Alexa Fluor® 647 Anti-ATP5A antibody [EPR13030(B)] (ab196198) is a rabbit recombinant monoclonal antibody and is validated for use in Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

Related products
Antibody clone EPR13030(B) is also available pre-conjugated to a variety of labels for your convenience – Anti-ATP5A Alexa Fluor® 647 [EPR13030(B)] (ab196198).

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	ATP5A also known as ATP synthase F1 subunit alpha is a protein important for cellular energy production. As part of the ATP synthase complex it plays a mechanical role in synthesizing ATP from ADP and inorganic phosphate. The ATP5A protein has a molecular weight of approximately 55 kDa and is widely expressed in the inner mitochondrial membrane across different cell types. Its central function lies in its ability to harness the energy of the proton gradient generated by the electron transport chain to catalyze ATP synthesis.
Biological function summary	ATP5A is essential in cellular respiration serving as a catalytic core of the F1 component of ATP synthase. As part of the multi-subunit enzyme complex ATP synthase is responsible for ATP production the primary energy currency in cells. The ATP5A subunit works in conjunction with other subunits of the enzyme oligomer to facilitate the conversion of energy released during oxidative phosphorylation into a usable form. The protein's efficiency in this biological role underpins its importance in sustaining cellular energy homeostasis.
Pathways	ATP5A plays a pivotal role in oxidative phosphorylation and the electron transport chain integral components of cellular respiration. The oxidative phosphorylation pathway depends on this protein to manage the synthesis of ATP molecules while the electron transport chain creates the proton gradient necessary for ATP production. ATP5A is functionally connected to other proteins in these pathways such as ATP5B and cytochrome c oxidase working in a coordinated manner to ensure efficient energy transfer and maintenance.

Associated diseases and disorders	ATP5A is implicative in mitochondrial disorders and neurodegenerative diseases such as Leigh syndrome and Parkinson's disease. These conditions often arise from deficits in ATP production where ineffective ATP synthase activity can contribute to cellular energy failures. In the context of Parkinson's disease for instance ATP5A interactions with other proteins like Parkin can contribute to mitochondrial dysfunction an important pathological feature of the disorder. Through such associations alterations in ATP5A activity can significantly impact disease progression and symptomatology.

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

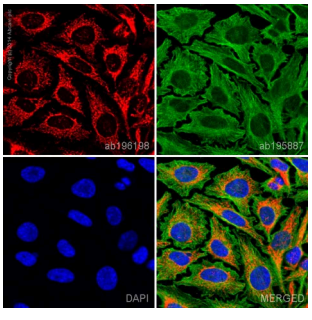
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images

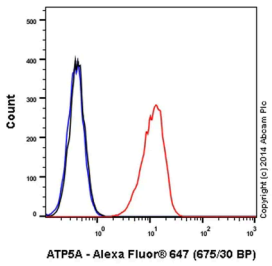


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab196198)

ATP5A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ATP5A antibody

ab196198 staining ATP5A in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized in 0.1% Triton X-100 for 5 minutes and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated with ab196198 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal [DM1A] to alpha Tubulin (Alexa

Fluor® 488, shown in green) at 2µg/ml overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Alexa Fluor® 647 Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab196198)

ATP5A Flow Cytometry (Intracellular) staining using rabbit Anti-ATP5A antibody

Overlay histogram showing HeLa cells stained with ab196198 (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 (ab196198, 1/50 dilution) for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) Alexa Fluor® 647 used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.
Acquisition of >5,000 events were collected using a solid-state 25mW red diode laser (635 nm) and 675/30 bandpass filter.

This antibody gave a positive signal in HeLa fixed with 4% formaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

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