abcam

ab109867

# Anti-ATP synthase Immunocapture antibody [12F4AD8AF8]

## Key facts

| | |
|---|---|
| **Isotype** | IgG2b |
| **Host species** | Mouse |
| **Storage buffer** | pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | 12F4AD8AF8 |
| **Light chain type** | kappa |
| **Concentration** | 1 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |
| **Purification notes** | The purity of ab109867 is near homogeneity, as judged by SDS-PAGE. The antibody was produced in vitro using hybridomas grown in serum free medium, and then purified by biochemical fractionation. |

## Reactivity data

## ICC

### Not recommended

| | |
|---|---|
| **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

### Not recommended

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information ATP5IF1

| | |
|---|---|
| **Function** | Endogenous F(1)F(o)-ATPase inhibitor limiting ATP depletion when the mitochondrial membrane potential falls below a threshold and the F(1)F(o)-ATP synthase starts hydrolyzing ATP to pump protons out of the mitochondrial matrix (PubMed:35926043). Required to avoid the consumption of cellular ATP when the F(1)F(o)-ATP synthase enzyme acts as an ATP hydrolase. Indirectly acts as a regulator of heme synthesis in erythroid tissues: regulates heme synthesis by modulating the mitochondrial pH and redox potential, allowing FECH to efficiently catalyze the incorporation of iron into protoporphyrin IX to produce heme. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |

| | |
|---|---|
| **Storage information** | Do Not Freeze |

## Notes

ab109867 is a sample of pure immunocapture antibody, not immobilized to a solid support.
This antibody was tested and confirmed not suitable for WB and ICC.

**Want a custom formulation?**
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | ATP synthase also known as Complex V functions mechanically as a pivotal component in cellular energy production. It is a complex enzyme with a mass of approximately 600 kDa composed of multiple subunits. ATP synthase localizes primarily to the inner membrane of mitochondria though it is also found in chloroplasts and bacteria. The enzyme facilitates the synthesis of adenosine triphosphate (ATP) from adenosine diphosphate (ADP) and inorganic phosphate driven by a proton gradient established across the membrane. |
| **Biological function summary** | ATP synthase plays an essential role in cellular metabolism by converting energy stored in the proton gradient into chemical energy in the form of ATP the universal energy currency. It functions as part of the mitochondrial respiratory chain complex working alongside other complexes such as NADH dehydrogenase and cytochrome c oxidase. ATP synthase is important for energy-intensive processes as it ensures cells have adequate ATP to maintain homeostasis and perform vital functions. |
| **Pathways** | The function of ATP synthase links closely to oxidative phosphorylation and photosynthesis two important biological pathways. In oxidative phosphorylation ATP synthase acts in concert with complexes I-IV of the electron transport chain utilizing the proton gradient generated by electron transfers. The enzyme also interacts with proteins like cytochrome c and ATP/ADP translocase which facilitate electron transfer and ATP exchange respectively. These interactions highlight ATP synthase's integral role in energy production pathways. |
| **Associated diseases and disorders** | Disruptions in ATP synthase function can lead to metabolic disorders such as mitochondrial encephalomyopathy and Leigh syndrome. These conditions involve mutations that impair ATP production and disrupt energy balance in cells. In these disorders ATP synthase remains linked to proteins implicated in mitochondrial function including cytochrome c oxidase and succinate dehydrogenase. These connections emphasize the enzyme's importance in maintaining mitochondrial integrity and energy homeostasis within cells. |

## 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.

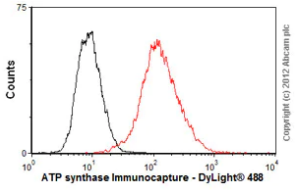
---

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.

## 1 product image




### Flow Cytometry - Anti-ATP synthase Immunocapture antibody [12F4AD8AF8] (ab109867)

ATP synthase Immunocapture Flow Cytometry staining using mouse Anti-ATP synthase Immunocapture antibody

Overlay histogram showing HepG2 cells stained with ab109867 (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 (ab109867, 1µg/1x$10^6$ 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/1x$10^6$ 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 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'.