

# ATP5A Rabbit mAb

Catalog # AP79034

## Product Information

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<b>Application</b>	WB, IHC-P, FC
<b>Primary Accession</b>	<a href="#">P25705</a>
<b>Reactivity</b>	Rat, Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Purification</b>	Affinity Chromatography
<b>Calculated MW</b>	59751

## Additional Information

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<b>Gene ID</b>	498
<b>Other Names</b>	ATP5F1A
<b>Dilution</b>	WB~~1/500-1/1000 IHC-P~~N/A FC~~1:10~50
<b>Format</b>	1xPBS(pH 7.4), 150mM NaCl, 50% Glycerol, 0.02% Sodium azide and 0.05% BSA
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	ATP5F1A ( <a href="#">HGNC:823</a> )
<b>Function</b>	<p>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:<a href="#">37244256</a>). These two domains are linked by a central stalk rotating inside the F(1) region and a stationary peripheral stalk (PubMed:<a href="#">37244256</a>). 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:<a href="#">37244256</a>). Subunit alpha does not bear the catalytic high- affinity ATP-binding sites (Probable). Binds the bacterial siderophore enterobactin</p>

and can promote mitochondrial accumulation of enterobactin-derived iron ions (PubMed:[30146159](#)).

### Cellular Location

Mitochondrion. Mitochondrion inner membrane {ECO:0000250|UniProtKB:P19483}; Peripheral membrane protein {ECO:0000250|UniProtKB:P19483}; Matrix side {ECO:0000250|UniProtKB:P19483}. Cell membrane; Peripheral membrane protein; Extracellular side. Note=Colocalizes with HRG on the cell surface of T-cells (PubMed:19285951).

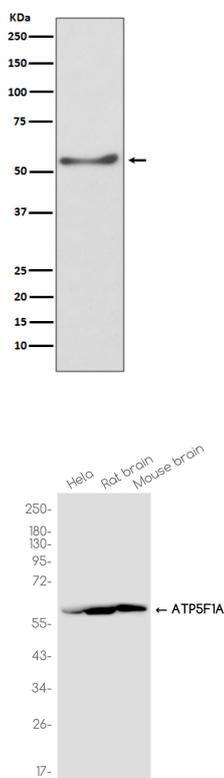
### Tissue Location

Fetal lung, heart, liver, gut and kidney. Expressed at higher levels in the fetal brain, retina and spinal cord

## Background

The ATP5A1 gene encodes the  $\alpha$  subunit of mitochondrial ATP synthase which produces ATP from ADP in the presence of a proton gradient across the membrane. The mitochondrial ATP synthase, also known as Complex V or F1F<sub>0</sub> ATP synthase, is a multi-subunit enzyme complex consisting of two functional domains, the F1-containing the catalytic core and the F<sub>0</sub>-containing the membrane proton channel. F<sub>0</sub> domain has 10 subunits: a, b, c, d, e, f, g, OSCP, A6L, and F6. F1 is composed of subunits  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ , and a loosely attached inhibitor protein IF1. Recently defect in ATP5A1 has been linked to the fatal neonatal mitochondrial encephalopathy. ATP5A1 is localized in the mitochondria and anti-ATP5A1 can be used as the loading control for mitochondrial or Complex V proteins. This antibody recognizes the endogenous ATP5A1 protein in lysates from various cell lines and tissues. The predicted MW of ATP5A1 is 60 kDa, while it undergoes the transit peptide cleavage to become a mature form around 50-55 kDa. Several isoforms of ATP5A1 exist due to the alternative splicing.

## Images



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