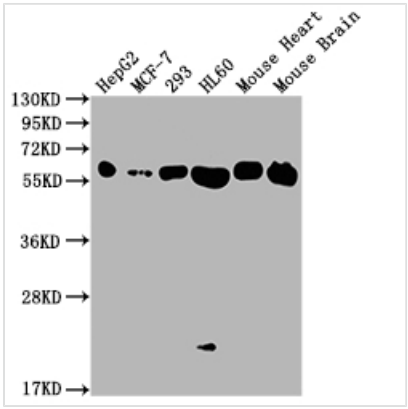
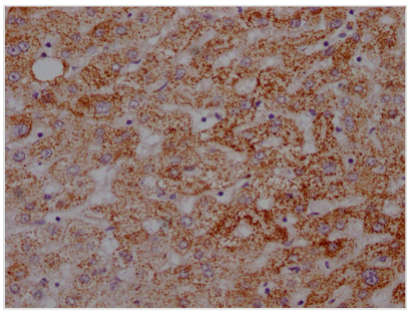
ATP5A1 Recombinant Monoclonal Antibody

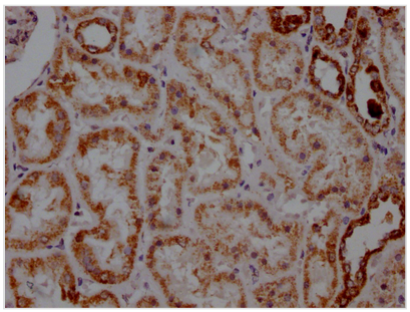
Product Code	CSB-RA159926A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P25705
Immunogen	A synthesized peptide derived from human ATP5A1
Species Reactivity	Human, Mouse
Tested Applications	ELISA, WB, IHC; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200
Relevance	Mitochondrial membrane ATP synthase (F(1)F(0) ATP synthase or Complex V) 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. F-type ATPases consist of two structural domains, F(1) - containing the extramembraneous catalytic core, and F(0) - containing the membrane proton channel, linked together by a central stalk and a peripheral stalk. 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. Subunits alpha and beta form the catalytic core in F(1). Rotation of the central stalk against the surrounding alpha(3)beta(3) subunits leads to hydrolysis of ATP in three separate catalytic sites on the beta subunits. Subunit alpha does not bear the catalytic high-affinity ATP-binding sites (By similarity).
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Cancer; Tags & Cell Markers; Metabolism; Signal transduction
Gene Names	ATP5A1
Clone No.	5G11
Image	



Western Blot
Positive WB detected in: HepG2 whole cell lysate, MCF-7 whole cell lysate, 293 whole cell lysate, HL60 whole cell lysate, Mouse Heart tissue, Mouse Brain tissue
All lanes: ATP5F1A antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 60, 55, 58 kDa
Observed band size: 60 kDa



IHC image of CSB-RA159926A0HU diluted at 1:100 and staining in paraffin-embedded human liver tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA159926A0HU diluted at 1:100 and staining in paraffin-embedded human kidney tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

The ATP5A1 recombinant monoclonal antibody can effectively detect human and mouse ATP5A1 proteins in ELISA, WB, and IHC assays. Its production involves recombinant DNA technology, whereby the gene coding for the ATP5A1 monoclonal antibody is synthesized through cDNA sequencing of the ATP5A1 antibody-producing hybridomas. These hybridomas are formed by fusing myeloma cells with B cells derived from animals immunized with a synthesized peptide derived from human ATP5A1. The synthesized gene is then cloned into a vector and then transfected into cells for cultivation. Finally, the ATP5A1 recombinant monoclonal antibody is purified through affinity chromatography from the cell culture supernatant.

ATP5A1 is a subunit of ATP synthase, an enzyme that plays a key role in cellular energy metabolism by synthesizing ATP. Specifically, ATP5A1 is part of the F1 sector of ATP synthase, which catalyzes the ATP synthesis from ADP and inorganic phosphate using energy from the proton motive force across the mitochondrial inner membrane. ATP5A1 contributes to the formation of the

catalytic core of the F1 sector and is involved in the binding and hydrolysis of ATP during the reaction cycle of ATP synthase. It is also implicated in several non-metabolic processes, such as cell proliferation and differentiation, apoptosis, and tumorigenesis.