abcam

ab124973

Anti-ATP7b antibody [EPR6794]

Anti-ATP7b antibody [EPR6794] (ab124973) is a rabbit monoclonal antibody detecting ATP7b in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR6794
Purification technique	Affinity purification Protein A
Dissociation constant	1.4 x 10^{-12} M
Concentration	0.132 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information ATP7B

Function	Copper ion transmembrane transporter involved in the export of copper out of the cells. It is involved in copper homeostasis in the liver, where it ensures the efflux of copper from hepatocytes into the bile in response to copper overload.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Product Specifications
Anti-ATP7b antibody [EPR6794] (ab124973) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, WB in human samples.
Anti-ATP7b antibody [EPR6794] (ab124973) specifically detects ATP7b (UniProt ID: P35670; Molecular weight: 157kDa) and is sold in 100 µL and 1 mL selling sizes.

Quality and Validation
Abcam's high quality manufacturing and validation processes ensure Anti-ATP7b antibody [EPR6794] (ab124973) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
The specificity of Anti-ATP7b antibody [EPR6794] (ab124973) has been confirmed by testing in knockout samples.
Anti-ATP7b antibody [EPR6794] (ab124973) has been cited over 24 times in peer reviewed journals and is trusted by the scientific community.

Related Products
Antibody clone EPR6794 is also available pre-conjugated to a variety of labels for your convenience - PE (ab211985).

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

Supplementary info

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

Activity summary	ATP7B also known as Wilson disease protein is a copper-transporting ATPase. This protein has a mass of approximately 146 kDa. It is mainly expressed in the liver kidney placenta and brain. ATP7B functions mechanically by transporting copper across different cellular compartments. It utilizes ATP hydrolysis to pump copper ions helping the body regulate copper homeostasis. This transport activity is located predominantly in the trans-Golgi network where ATP7B assists in incorporating copper into ceruloplasmin a critical copper-carrying blood plasma protein.
Biological function summary	ATP7B plays a significant role in maintaining copper balance within the body. It associates with intracellular vesicles and through its catalytic activity influences various cellular metabolic processes. Although ATP7B does not typically form large complexes its interaction with other proteins and cellular organelles contributes to copper ion binding and transfer. Proper ATP7B function ensures that copper is channeled effectively to places where it is required for enzymatic activity or is expelled from cells to prevent accumulation.
Pathways	ATP7B is a central figure in the copper transport and homeostasis pathway. Its role is directly connected to the biosynthesis of copper-dependent enzymes. The protein impacts the pathway involving ceruloplasmin biosynthesis by regulating copper ion incorporation. ATP7A another copper-transporting ATPase shares similar pathway responsibilities but in different tissues showing divergence in their specific biological roles. Together they ensure whole-body copper balance.
Associated diseases and disorders	ATP7B mutations or dysfunction is strongly implicated in Wilson's disease a genetic disorder characterized by excessive copper accumulation. This can result in hepatic neurological and psychiatric symptoms due to copper buildup. The protein's relationship to Wilson's disease suggests its critical role in preventing copper toxicity. There is also evidence linking ATP7B with Menkes disease but ATP7A plays a more direct role in Menkes highlighting the distinct responsibilities these ATPases have in different tissues and 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.

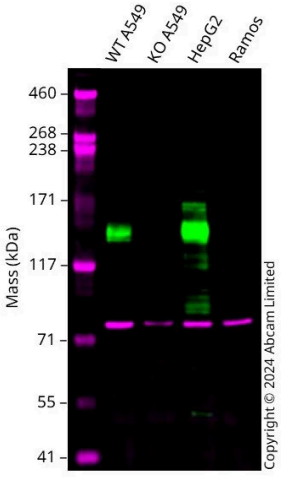
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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7 product images



Western blot - Anti-ATP7b antibody [EPR6794] (ab124973)

ATP7b Western blot staining using rabbit Anti-ATP7b antibody

Western blot: Rabbit Monoclonal[EPR6794] to ATP7b ab124973 staining at 1/1000 dilution, shown in green; Mouse anti-CANX (ab238078) loading control staining at 1/20,000 dilution, shown in magenta. A band was observed at 153 kDa in Wild-type A549 ab288558 cell lysates with no signal observed at this size in ATP7B knockout A549 cell line (ab326074). To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-ATP7b antibody [EPR6794] (ab124973) at 1/1000 dilution

Lane 1:
Wild-type A549 at 10 µg

Lane 2:
Western blot - Human ATP7B knockout A549 cell line (ab326074) at 10 µg

Lane 3:
HepG2 at 10 µg

Lane 4:
Ramos at 10 µg

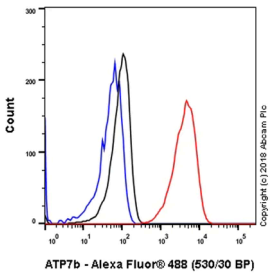
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 157 kDa

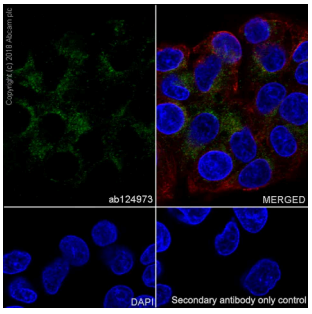
Observed band size: 153 kDa



Flow Cytometry (Intracellular) - Anti-ATP7b antibody [EPR6794] (ab124973)

ATP7b Flow Cytometry (Intracellular) staining using rabbit Anti-ATP7b antibody

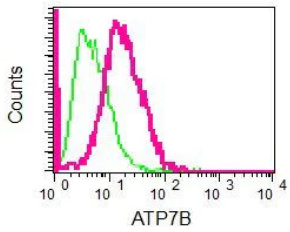
Intracellular Flow Cytometry analysis of HepG2 (Human hepatocellular carcinoma epithelial cell) cells labeling ATP7b with purified ab124973 at 1/20 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-ATP7b antibody [EPR6794] (ab124973)

ATP7b Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ATP7b antibody

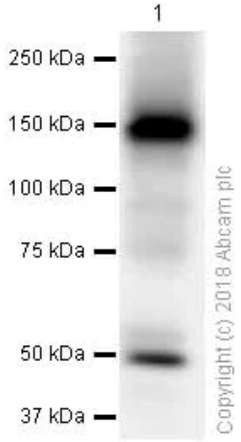
Immunocytochemistry/ Immunofluorescence analysis of HepG2 (Human hepatocellular carcinoma epithelial cell) cells labeling ATP7b with purified ab124973 at 1:100 dilution (1.2 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-ATP7b antibody [EPR6794] (ab124973)

ATP7b Flow Cytometry (Intracellular) staining using rabbit Anti-ATP7b antibody

Intracellular flow cytometric analysis of permeabilized HepG2 cells using unpurified anti-ATP7B RabMAb in red (ab124973) or a rabbit IgG in green (negative).



Western blot - Anti-ATP7b antibody [EPR6794] (ab124973)

All lanes:
Western blot - Anti-ATP7b antibody [EPR6794] (ab124973) at 1/1000 dilution

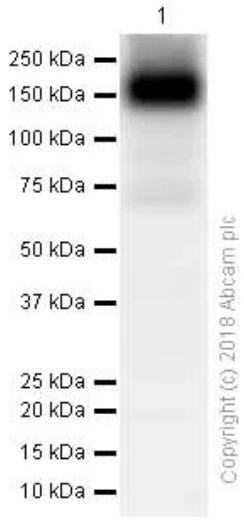
All lanes:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 157 kDa

Observed band size: 157 kDa



Western blot - Anti-ATP7b antibody [EPR6794] (ab124973)

All lanes:
Western blot - Anti-ATP7b antibody [EPR6794] (ab124973) at 1/10000 dilution

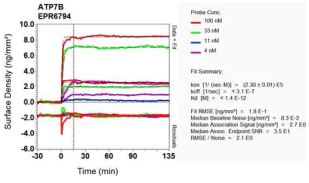
All lanes:
Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 157 kDa

Observed band size: 157 kDa



OI-RD Scanning - Anti-ATP7b antibody [EPR6794] (ab124973)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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