abcam

ab284388

Anti-alpha 1 Fetoprotein antibody [RM1011]

Recombinant | RabMAb | 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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1011
Purification technique	Affinity purification Protein A
Concentration	0.537 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human

Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

I-ELISA

Tested

Species	Recombinant fragment
Dilution info	-
Notes	Use at 125 ng/ml

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	IHC suitable for Human only.

Not recommended

Species	Mouse
Dilution info	-
Notes	IHC suitable for Human only.

Species	Rat

Dilution info	-
Notes	IHC suitable for Human only.

Species	Recombinant fragment
Dilution info	-
Notes	-

Target data

See full target information AFP

Function	Binds copper, nickel, and fatty acids as well as, and bilirubin less well than, serum albumin. Only a small percentage (less than 2%) of the human AFP shows estrogen-binding properties.

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

Notes

IHC suitable for Human only.
What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

Supplementary info

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

Activity summary	Alpha-fetoprotein also known as alpha 1-fetoprotein or AFP is a glycoprotein composed of a single polypeptide chain with a molecular mass of approximately 69 kDa. AFP is primarily expressed in the fetal liver yolk sac and gastrointestinal tract during embryonic development. In adults the expression of AFP is limited and occurs mainly in the liver. The protein belongs to the albuminoid gene family and shares structural similarity with serum albumin contributing to its role in fetal serum transport.
Biological function summary	Alpha-fetoprotein functions as a fetal plasma protein with roles similar to serum albumin including the binding and transport of ligands such as bilirubin and fatty acids. It does not form part of any larger protein complex but is significant in modulating fetal immune tolerance. In the fetal environment AFP helps protect cells from maternal immune attacks by binding to estrogens and other growth-modulating factors. Its function during pregnancy is critical for maintaining homeostasis and ensuring the fetus's viability.
Pathways	Alpha 1-fetoprotein plays a role in several important biological pathways related to cellular growth and immune response modulation. One such pathway involves regulation of cell proliferation and differentiation in the developing liver. AFP interacts with cellular receptors that influence these processes. Additionally it plays a part in immune pathways interacting with elements that control immune overlooking to fetal antigens hence being linked to both hepatic and immune system proteins like albumin and estrogen receptors.
Associated diseases and disorders	High levels of alpha-fetoprotein are linked to hepatocellular carcinoma and germ cell tumors such as yolk sac tumor. AFP serves as a tumor marker in these conditions aiding in both diagnosis and monitoring treatment response. In liver cancer AFP levels often correlate with tumor burden while in germ cell tumors it connects to proteins like beta-human chorionic gonadotropin (beta-hCG). Both markers are used together in clinical settings to provide insights into tumor progression and therapeutic efficacy.

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.

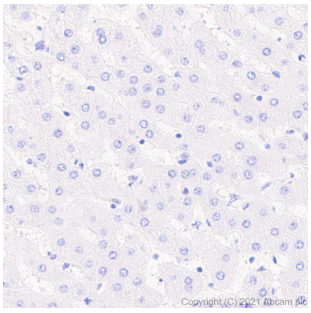
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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9 product images



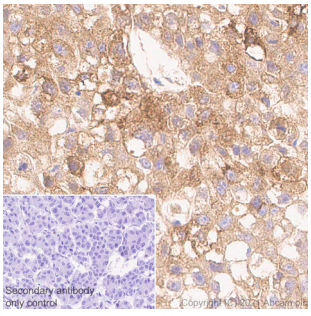
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha 1 Fetoprotein antibody

Negative control: No staining on human liver.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labelling alpha 1 Fetoprotein with ab284388 at 1/2000 (0.231 µg/mL) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The section was incubated with ab284388 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



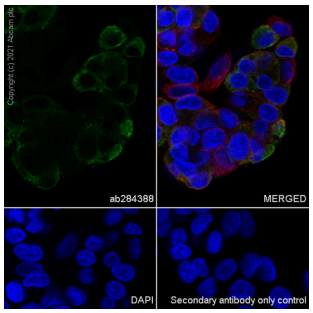
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha 1 Fetoprotein antibody

Immunohistochemical analysis of paraffin-embedded Human hepatic carcinoma tissue labelling alpha 1 Fetoprotein with ab284388 at 1/2000 (0.231 µg/mL) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human hepatic carcinoma. The section was incubated with ab284388 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



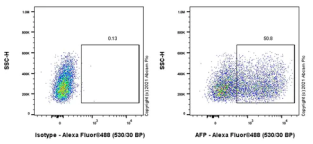
Immunocytochemistry - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Immunocytochemistry staining using rabbit Anti-alpha 1 Fetoprotein antibody

This data was developed using ab284388, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 cells labelling alpha 1 Fetoprotein with ab284388 at 1/50 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (2µg/mL) dilution (Green). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5µg/mL dilution (Red). The Nuclear counterstain was DAPI (Blue).

Confocal image showing cytoplasmic staining in HepG2 cells is observed.

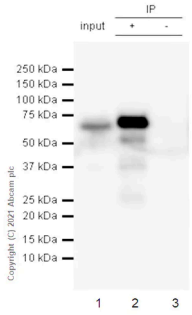
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 (2µg/mL) dilution.



Flow Cytometry - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Flow Cytometry staining using rabbit Anti-alpha 1 Fetoprotein antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HepG2 (Human hepatocellular carcinoma epithelial cell) cells labelling alpha 1 Fetoprotein with ab284388 at 1/500 dilution Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control. A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

alpha 1 Fetoprotein was immunoprecipitated from 0.35 mg HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate 10ug with ab284388 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab284388 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate 10ug

Lane 2: ab284388 IP in HepG2 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab284388 in HepG2 whole cell lysate

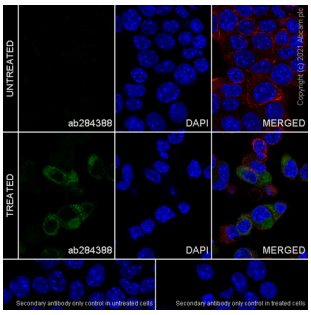
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds

All lanes:
Immunoprecipitation - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Predicted band size: 68 kDa

Observed band size: 68 kDa

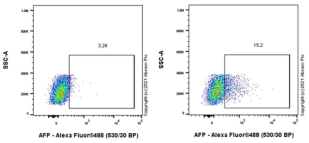


Immunocytochemistry - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Immunocytochemistry staining using rabbit Anti-alpha 1 Fetoprotein antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Hepa1-6 cells labelling alpha 1 Fetoprotein with ab284388 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2µg/mL dilution (Green). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5µg/mL) dilution (Red). The Nuclear counterstain was DAPI (Blue).
Confocal image showing increased cytoplasmic staining in Hepa1-6 cells treated with Brefeldin A (300 ng/ml) for 24 h is observed.

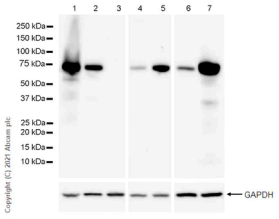
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2µg/mL) dilution.



Flow Cytometry - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Flow Cytometry staining using rabbit Anti-alpha 1 Fetoprotein antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 0.1% Tween-20 permeabilized Hepa1-6 (Mouse hepatoma epithelial cell) treated with 300ng/ml BFA for 24h (Right) / Untreated control (Left) cells labelling alpha 1 Fetoprotein with ab284388 at 1/500 dilution. A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

Alpha 1 Fetoprotein Western blot staining using rabbit Anti-alpha 1 Fetoprotein antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Negative control: MDA-MB-231.

Exposure time: Lane 4-5: 26 seconds ; Others: 5 seconds

All lanes:
Western blot - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388) at 1/1000 dilution

Lane 1:
HepG2 (Human hepatocellar carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Huh7 (Human hepatocellar carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
MDA-MB-231 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:

Hepa1-6 (Mouse hepatoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
Hepa1-6 treated with 300ng/ml BFA for 24h whole cell lysate at 20 µg

Lane 6:
Mouse placenta lysate at 20 µg

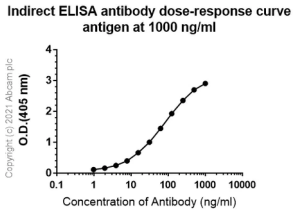
Lane 7:
Rat placenta lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 68 kDa

Observed band size: 68 kDa



Indirect ELISA - Anti-alpha 1 Fetoprotein antibody [RM1011] (ab284388)

ELISA using ab284388 at varying antibody concentrations and antigen concentration at 1000 ng/ml. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) (1/2500) was used as the secondary antibody.

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