abcam

ab307728

Anti-eIF4A2 antibody [EPR27347-74]

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	EPR27347-74
Purification technique	Affinity purification Protein A
Concentration	0.496 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Recombinant fragment - Human

Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat
Dilution info	1/500
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information EIF4A2

Function ATP-dependent RNA helicase which is a subunit of the eIF4F complex involved in cap recognition and is required for mRNA binding to ribosome. In the current model of translation initiation, eIF4A unwinds RNA secondary structures in the 5'-UTR of mRNAs which is necessary to allow efficient binding of the small ribosomal subunit, and subsequent scanning for the initiator codon.

Storage

Shipped at conditions	Conditional Ambient
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

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	The eIF4A2 also known as DDX2B functions as an RNA helicase with an ATP-dependent mechanism. It unwinds RNA secondary structures in the 5'UTR of mRNAs to facilitate ribosome binding. eIF4A2 belongs to the DEAD-box family of proteins and it has a molecular mass of approximately 46 kDa. It is ubiquitously expressed in various tissues indicating its broad role in cellular processes.
Biological function summary	EIF4A2 is integral to the initiation of protein synthesis. It acts as a core member of the eIF4F complex along with the cap-binding protein eIF4E and scaffold protein eIF4G. This complex enables the recruitment of ribosomes to mRNA an important step in translation initiation. eIF4A2 helps regulate the translation of specific mRNAs that are important for cell growth and proliferation affecting how cells respond to environmental stimuli.
Pathways	EIF4A2 plays a significant role in the mTOR and MAPK signaling pathways. In the mTOR pathway eIF4A2 controls the translation of mRNAs that drive cell growth and metabolism. It also interacts with other proteins such as mTORC1 and S6K which modulate these processes. Its involvement in the MAPK pathway links it with cell survival and stress responses emphasizing its interaction with proteins like MEK1/2 and ERK1/2 that further propagate these signals.
Associated diseases and disorders	EIF4A2 has implications in cancer and neurodegenerative diseases. eIF4A2's overexpression has been associated with various cancers whereby it encourages oncogenic transformation through its role in synthesis of growth-related proteins.

Moreover the helicase has links to Alzheimer's disease where it may influence disease progression by modulating synaptic plasticity proteins such as APP and tau important for neuronal function. The regulation by eIF4A2 of these proteins highlights its potential as a therapeutic target.

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

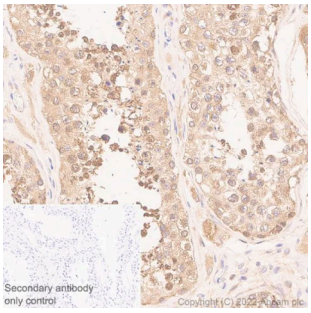
We do not recommend this combination. It is not covered by our product promise.

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.

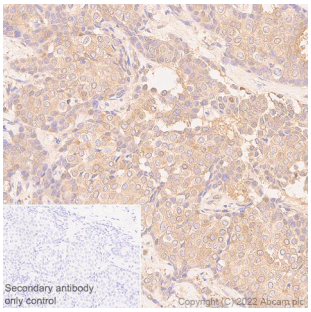
Full details and terms and conditions can be found here:
Terms & Conditions.

16 product images



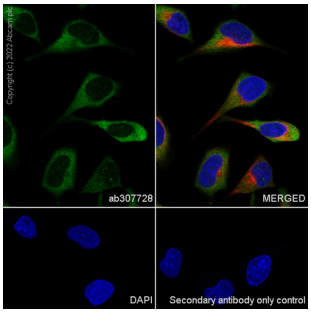
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling eIF4A2 with ab307728 at 1/10000 (0.05 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Positive staining on human testis. The section was incubated with ab307728 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



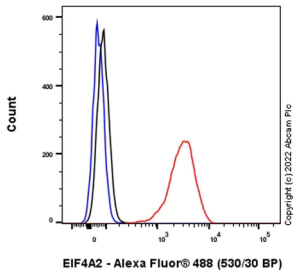
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Immunohistochemical analysis of paraffin-embedded Human breast carcino tissue labeling eIF4A2 with ab307728 at 1/10000 (0.05 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Positive staining on human breast carcinoma (PMID: 21219636). The section was incubated with ab307728 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



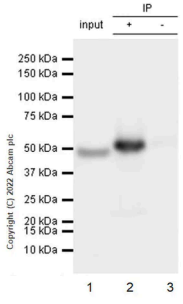
Immunocytochemistry/ Immunofluorescence - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling eIF4A2 with ab307728 at 1/50 (9.92 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic and weak nuclear staining in HeLa cell line.Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling eIF4A2 with ab307728 at 1/500 dilution (0.1ug) (Red) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

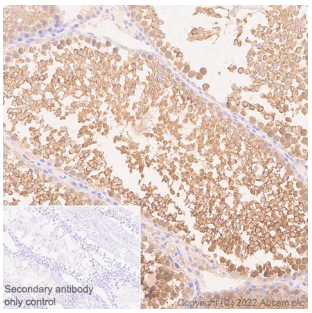
eIF4A2 was immunoprecipitated from 0.35 mg HeLa whole cell lysate with ab307728 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307728 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate Lane 2: ab307728 IP in HeLa whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307728 in HeLa whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 1 seconds
All lanes:
Immunoprecipitation - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/30 dilution

Secondary

All lanes:

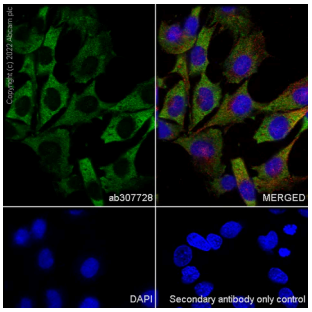
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 1s



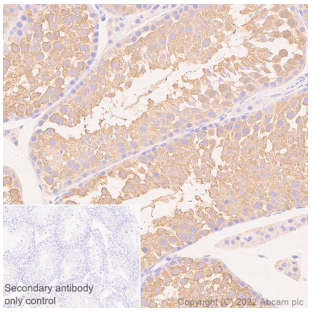
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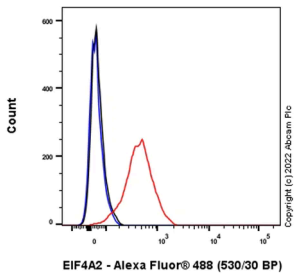
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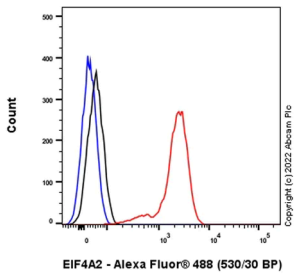
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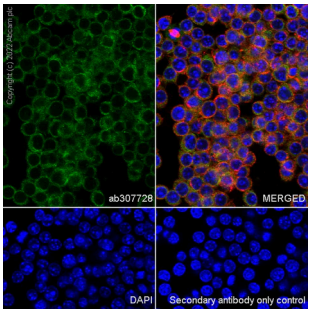
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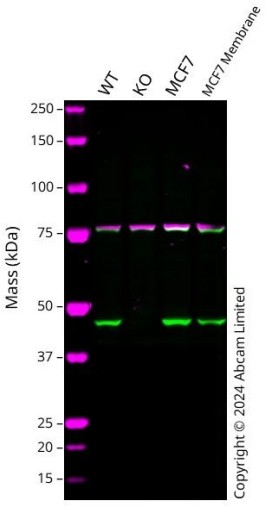
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Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

EIF4A2 Western blot staining using rabbit Anti-eIF4A2 antibody

Western blot: Anti-EIF4A2 antibody [EPR27347-74] (ab307728) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab307728 was shown to bind specifically to EIF4A2. A band was observed at 48 kDa in wild-type A549 cell lysates with no signal observed at this size in EIF4A2 knockout cell line (ab326029). To generate this image, wild-type and EIF4A2 knockout A549 cell lysates were analysed. First, 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 IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
Western blot - Human EIF4A2 knockout A549 cell line (ab326029) at 20 µg

Lane 3:
MCF7 cell lysate at 20 µg

Lane 4:

MCF7 Membrane Prep cell lysate at 20 µg

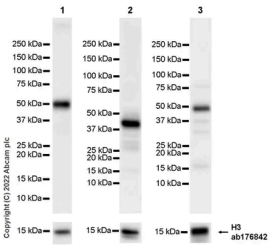
Secondary

Lanes 1 - 4:
Goat anti-Rabbit IgG H&L 800CW at 1/20000 dilution

Lanes 1 - 4:
Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 48 kDa



Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: liver(PMID:8521730). In Western blot, anti- H3 antibody (ab176842) loading control staining at 1/100000 dilution. Exposure time: 6 seconds
All lanes:
Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/1000 dilution

Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
Human heart tissue lysate at 20 µg

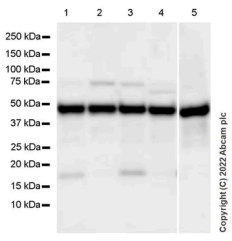
Lane 3:
Human liver tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 48 kDa

Exposure time: 6s



Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 10 seconds
All lanes:
Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 4:
Raji (human Burkitts lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 5:

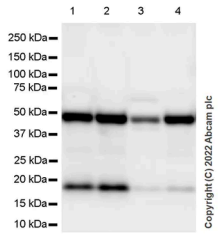
Human testis tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 48 kDa

Exposure time: 10s



Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Blocking and diluting buffer and concentration: 5% NFDM/TBST The identity of the lower MW band at approximately 20 kDa is unknown. Exposure time: 15 seconds
All lanes:
Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Lane 3:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

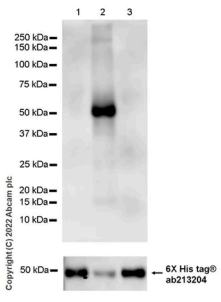
Lane 4:
C2C12 (mouse myoblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 48 kDa

Exposure time: 15s



Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
This antibody does not cross-react with human EIF4A1 and human EIF4A3.

This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

In Western blot, anti-His antibody (ab213204) staining at 1/5000 dilution.

All lanes:
Western blot - Anti-eIF4A2 antibody [EPR27347-74] (ab307728) at 1/1000 dilution

Lane 1:
His-tagged human EIF4A1 recombinant protein at 10 ng

Lane 2:
His-tagged human EIF4A2 recombinant protein at 10 ng

Lane 3:
His-tagged human EIF4A3 recombinant protein at 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Observed band size: 48 kDa

Exposure time: 48s

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