abcam

ab233727

Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR10411
Purification technique	Affinity purification Protein A
Concentration	1.034 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat, Human
Dilution info	-

Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

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

IP

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

Target data

See full target information AGO2

Function	Required for RNA-mediated gene silencing (RNAi) by the RNA-induced silencing complex (RISC). The 'minimal RISC' appears to include AGO2 bound to a short guide RNA such as a microRNA (miRNA) or short interfering RNA (siRNA). These guide RNAs direct RISC to complementary mRNAs that are targets for RISC-mediated gene silencing. The precise mechanism of gene silencing depends on the degree of complementarity between the miRNA or siRNA and its target. Binding of RISC to a perfectly complementary mRNA generally results in silencing due to endonucleolytic cleavage of the mRNA specifically by AGO2. Binding of RISC to a partially complementary mRNA results in silencing through inhibition of translation, and this is independent of endonuclease activity. May inhibit translation initiation by binding to the 7-methylguanosine cap, thereby preventing the recruitment of the translation initiation factor eIF4-E. May also inhibit translation initiation via interaction with EIF6, which itself binds to the 60S ribosomal subunit and prevents its association with the 40S ribosomal subunit. The inhibition of translational initiation leads to the accumulation of the affected mRNA in cytoplasmic processing bodies (P-bodies), where mRNA degradation may subsequently occur. In some cases RISC-mediated translational repression is also observed for miRNAs that perfectly match the 3' untranslated region (3'-UTR). Can also up-regulate the translation of specific mRNAs under certain growth conditions. Binds to the AU element of the 3'-UTR of the TNF mRNA and up-regulates translation under conditions of serum starvation. Also required for transcriptional gene silencing (TGS), in which short RNAs known as antigene RNAs or agRNAs direct the transcriptional repression of complementary promoter regions. (Microbial infection) Upon Sars-CoV-2 infection, associates with viral miRNA-like small RNA, CoV2-miR-O7a, and may repress mRNAs, such as BATF2, to evade the IFN response.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab233727 is the carrier-free version of ab186733.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Argonaute-2 often referred to as Ago2 or Argonaute-2 protein plays an important role in the RNA-induced silencing complex (RISC). It has a molecular weight of approximately 97 kDa. Ago2 is found in the cytoplasm and nucleus of cells and is expressed in a wide range of tissues including the brain and liver. Its mechanical function involves binding to guide RNA and facilitating strand cleavage which is essential for gene silencing and regulation at the post-transcriptional level.
Biological function summary	The Argonaute-2 protein participates in gene silencing mechanisms. As a part of RISC Ago2 binds to microRNAs (miRNAs) or small interfering RNAs (siRNAs) to direct sequence-specific cleavage of target mRNAs regulating their translation and stability. This protein is a part of a multi-protein complex that modulates gene expression and influences cellular homeostasis and development. In its biological role Argonaute-2 impacts cellular differentiation proliferation and apoptosis.
Pathways	Several cellular processes require Argonaute-2 notably the RNA interference (RNAi) and microRNA (miRNA) pathways. In these pathways it interacts with Dicer a protein essential for the maturation of small RNA molecules and facilitates the gene silencing process. Ago2 is also involved in the regulation of gene expression during embryonic development and stress responses indicating its importance in maintaining cellular function and responding to environmental changes.
Associated diseases and disorders	Anomalies in Argonaute-2 activity correlate with cancer including lung and breast cancer where dysregulation of miRNA pathways can lead to unchecked cellular proliferation. It is also linked to neurological disorders like schizophrenia possibly due to its role in gene expression regulation in neural cells. Interactions between Ago2 and proteins like Dicer and other Argonautes suggest complex regulatory networks that when disrupted contribute to these diseases.

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.

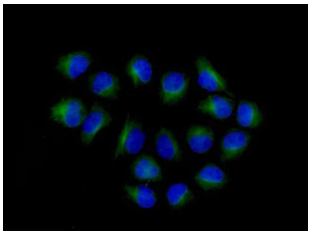
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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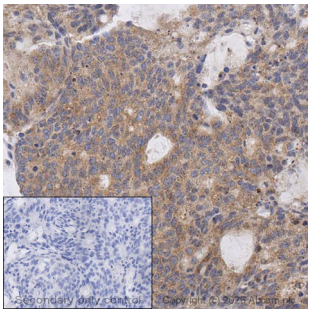
10 product images



Immunocytochemistry/ Immunofluorescence - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Argonaute-2 antibody

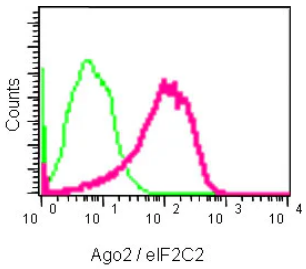
Immunofluorescent analysis of 4% paraformaldehyde-fixed HeLa cells labeling Ago2 / eIF2C2 with ab186733 at 1/250 dilution followed by Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody at 1/200 dilution. Counter stained with Dapi.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab186733).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human colon adenocarcinoma using rabbit Anti-Argonaute-2 antibody

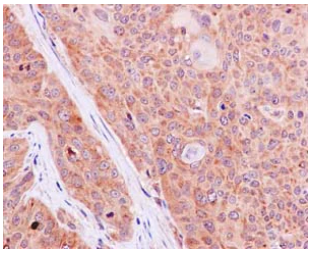
This data was developed using ab186733, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of formalin fixed paraffin embedded human colon AC labelling Argonaute-2 with ab186733 at a concentration of 0.5 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. The heat-mediated antigen retrieval was conducted with at 100 °C, pH 8.5 for 32 mins. ab186733 Anti-Argonaute-2 antibody [EPR10411] was incubated for 16 mins, at 37 °C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control. Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



Flow Cytometry (Intracellular) - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Flow Cytometry (Intracellular) staining using rabbit Anti-Argonaute-2 antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed MCF7 cells labeling Ago2 / eIF2C2 with ab186733 at 1/60 dilution (red) compared to a Rabbit monoclonal IgG isotype control (green), followed by Goat anti rabbit IgG (FITC) secondary antibody at 1/150 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab186733).

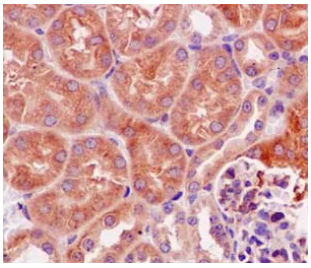


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Argonaute-2 antibody

Immunohistochemical analysis of paraffin-embedded Human cervix carcinoma tissue labeling Ago2 / eIF2C2 with ab186733 at 1/100 dilution followed by prediluted HRP Polymer for Rabbit IgG. Counter stained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab186733).

Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.

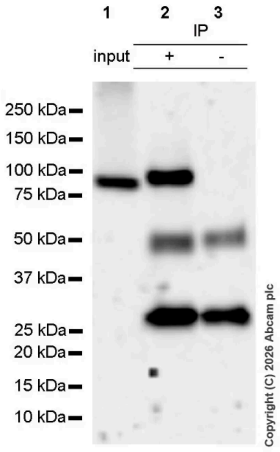


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Argonaute-2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling Ago2 / eIF2C2 with ab186733 at 1/100 dilution followed by prediluted HRP Polymer for Rabbit IgG. Counter stained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab186733).

Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

This data was developed using ab186733, the same antibody clone in a different buffer formulation.
Argonaute-2 was immunoprecipitated from C6 (rat glial tumor glial cell) whole cell lysate 10 µg with ab186733 1/1000 dilution. Western blot was performed on the immunoprecipitate using ab186733 at 1/1000 dilution. Capture antibody, 1/30 dilution (2µg in 0.35mg lysates).

Rabbit monoclonal IgG (ab172730) Isotype Control was used instead of ab186733 in C6 (rat glial tumor glial cell) whole cell lysate (Lane 3).

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

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

All lanes:
Immunoprecipitation - Anti-Argonaute-2 antibody [EPR10411] (ab186733) at 1/1000 dilution

All lanes:
C6 (rat glial tumor glial cell) whole cell lysate

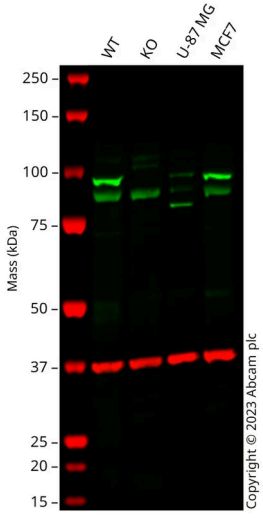
Secondary

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

Developed using the ECL technique.

Observed band size: 97 kDa

Exposure time: 180s



Western blot - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Western blot staining using rabbit Anti-Argonaute-2 antibody

This data was developed using ab186733, the same antibody clone in a different buffer formulation.
False colour image of Western blot: Anti-Argonaute-2 antibody [EPR10411] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab186733 was shown to bind specifically to Argonaute-2. A band was observed at 95 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in AGO2 knockout cell line. To generate this image, wild-type and AGO2 knockout HCT 116 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-Argonaute-2 antibody [EPR10411] (ab186733) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysate at 20 µg

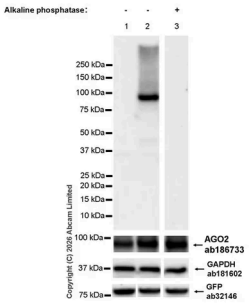
Lane 2:
AGO2 knockout HCT 116 cell lysate at 20 µg

Lane 3:
U-87 MG cell lysate at 20 µg

Lane 4:
MCF7 cell lysate at 2 µg

Performed under reducing conditions.

Observed band size: 95 kDa



Western blot - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Western blot staining using rabbit Anti-Argonaute-2 antibody

This data was developed using ab186733, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) (1:200000) (36KDa); Anti-AGO2 antibody [EPR10411] (ab186733) (1:1000) (97KDa); Anti-GFP antibody [ECA-385] (ab32146) (1:1000) (75KDa)

All lanes:
Western blot - Anti-AGO2(phospho S387) antibody [EPR29226-168] (ab326569) at 1/1000 dilution

Lane 1:
HEK293T cells were co-transfected with human AGO2(S387A) (His-tagged) and human AKT3 (EGFP-tagged) expression vectors, an upstream kinase used to enhance AGO2 phosphorylation at S387, whole cell lysate (Untreated membrane) at 20 µg

Lane 2:
HEK293T cells were co-transfected with human AGO2 (His-tagged) and human AKT3 (EGFP-tagged) expression vectors, an upstream kinase used to enhance AGO2 phosphorylation at S387, whole cell lysate (Untreated membrane) at 20 µg

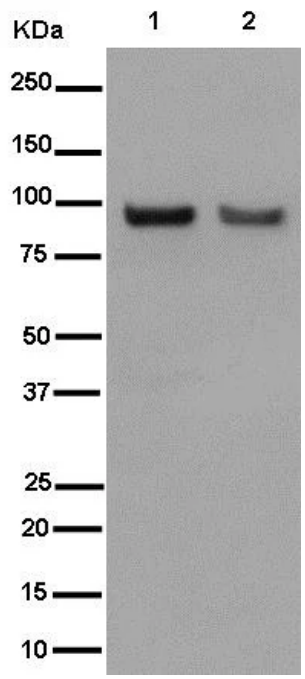
Lane 3:
HEK293T cells were co-transfected with human AGO2 (His-tagged) and human AKT3 (EGFP-tagged) expression vectors, an upstream kinase used to enhance AGO2 phosphorylation at S387, whole cell lysate (Alkaline phosphatase treated membrane) at 20 µg

Secondary

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

Observed band size: 97 kDa, 36 kDa, 75 kDa

Exposure time: 10s



Western blot - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Western blot staining using rabbit Anti-Argonaute-2 antibody

This data was developed using ab186733, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10411] (ab186733) at 1/1000 dilution

Lane 1:
C6 cell lysate at 10 µg

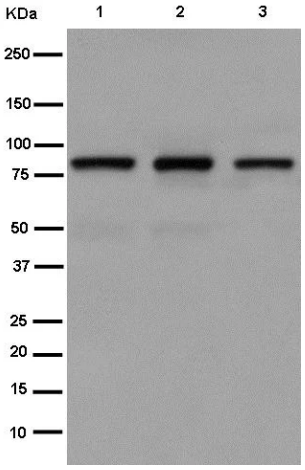
Lane 2:
RAW 264.7 cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 97 kDa

Observed band size: 97 kDa



Western blot - Anti-Argonaute-2 antibody [EPR10411] - BSA and Azide free (ab233727)

Argonaute-2 Western blot staining using rabbit Anti-Argonaute-2 antibody

This data was developed using ab186733, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10411] (ab186733) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 20 µg

Lane 2:
MCF7 cell lysate at 20 µg

Lane 3:
HepG2 cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 97 kDa

Observed band size: 97 kDa

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