abcam

ab156870

Anti-Argonaute-2 antibody [EPR10410]

Anti-Argonaute-2 antibody [EPR10410] (ab156870) is a rabbit monoclonal antibody detecting Argonaute-2 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR10410
Purification technique	Affinity purification Protein A
Concentration	1.888 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

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

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

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

ICC/IF

Tested

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

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/200
Notes	-

Expected

Species	Rat, 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	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	Stable for 12 months at -20°C

Notes

What is this antibody validated in?
Anti-Argonaute-2 antibody [EPR10410] (ab156870) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P),

Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Argonaute-2?
Anti-Argonaute-2 [EPR10410] (ab156870) specifically detects a band for Argonaute-2 (UniProt: Q9UKV8) at a molecular weight of 97kDa.

Trusted by the scientific community
Anti-Argonaute-2 [EPR10410] (ab156870) was first used in a scientific publication in 2013 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-Argonaute-2 antibody [EPR10410] (ab156870) has been confirmed by Western blot testing in AGO2 Knockout HCT 116 cells.

Other related products
We have a range of other formats of antibody clone [EPR10410] also available for your convenience: ab156870, Alexa Fluor® 488 - ab196469, Alexa Fluor® 647 - ab196516, Carrier free - ab249284, PE - ab306054, APC - ab306055, Alkaline Phosphatase - ab308922, Alexa Fluor® 594 - ab310667, Alexa Fluor® 555 - ab312198, Alexa Fluor® 568 - ab312686, Alexa Fluor® 750 - ab321145

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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

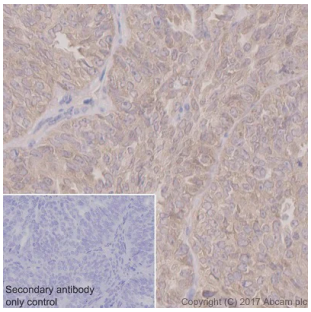
We do not recommend this combination. It is not covered by our product promise.

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.

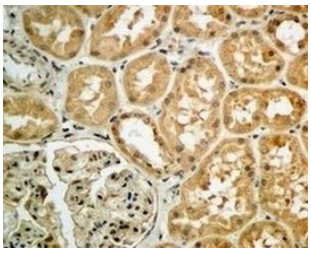
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

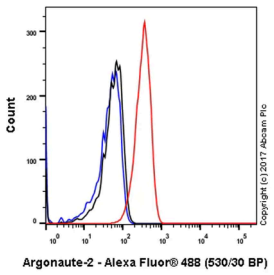
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human ovarian carcinoma tissue sections labeling Argonaute -2 with purified ab156870 at 1:100 dilution (1.9 µg/ml). Heat mediated antigen retrieval was performed using EDTA Buffer pH9.0. Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

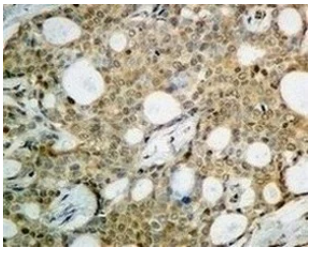
Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling Ago2 / eIF2C2 with unpurified ab156870 at 1/50 dilution.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

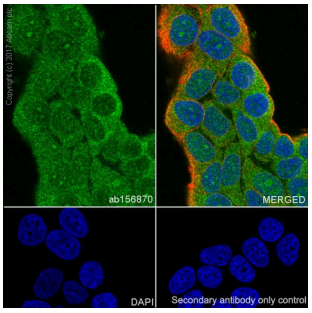
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling Argonaute-2 (red) with unpurifiedab156870 at a 1/200 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (ab172730). Blue (unlabeled control) - Cells without incubation with the primary and secondary antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

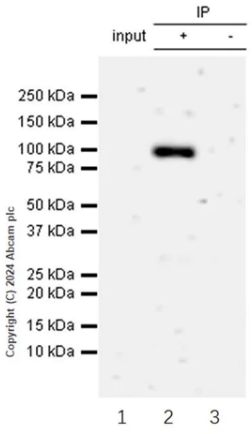
Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling Ago2 / eIF2C2 with unpurified ab156870 at 1/50 dilution.
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

Immunocytochemistry/ Immunofluorescence analysis of MCF-7 (Human breast adenocarcinoma epithelial cell) cells labeling Argonaute-2 with Purified ab156870 at 1:200 dilution (9.5µg/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). ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunoprecipitation - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

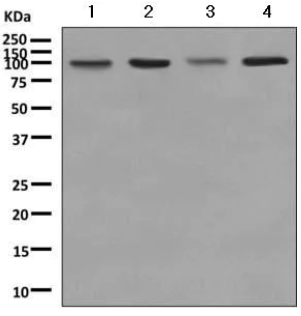
Argonaute-2 was immunoprecipitated from HeLa cell lysate with ab156870 at 1:30 dilution (2µg in 0.35mg lysates). Western blot was performed from the immunoprecipitate using ab156870 at 1/1000 dilution. Secondary antibody VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution. Lane 1: HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate Lane 2: HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab156870 in HeLa whole cell lysate Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Immunoprecipitation - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

Lanes 1 - 2:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab156870 in HeLa whole cell lysate

Secondary

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



Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
MCF7 cell lysate at 10 µg

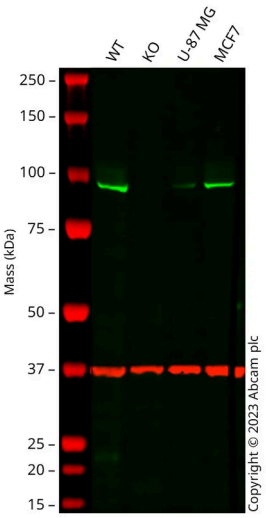
Lane 3:
HepG2 cell lysate at 10 µg

Lane 4:
K562 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 97 kDa



Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

False colour image of Western blot: Anti-Argonaute-2 antibody [EPR10410] 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, ab156870 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 [EPR10410] (ab156870) at 1/1000 dilution

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

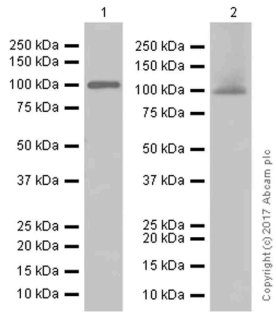
Lane 2:
AGO2 knockout HCT 116 cell lysate at 20 µg

Lane 3:
U-87 MG cell lysate at 20 µg

Lane 4:
MCF7 cell lysate at 20 µg

Performed under reducing conditions.

Observed band size: 95 kDa



Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870) at 1/1000 dilution

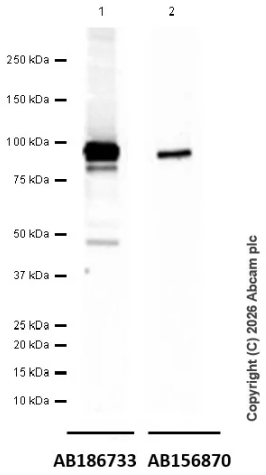
Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Lane 2:
HUVEC (Human umbilical vein endothelial 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: 97 kDa



Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

Argonaute-2 Western blot staining of HeLa cell lysate using rabbit Anti-Argonaute-2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot analysis, ab156870 exhibited lower sensitivity compared to ab186733, for which reason we recommend ab186733 as superior alternative.

All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870) at 1/1000 dilution

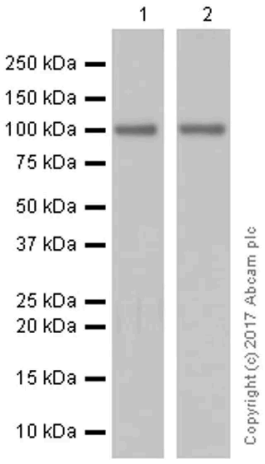
All lanes:
HeLa cell lysate

Secondary

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

Observed band size: 97 kDa

Exposure time: 100s



Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870)

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

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-Argonaute-2 antibody [EPR10410] (ab156870) at 1/5000 dilution

Lane 1:
Rat liver lysates at 20 µg

Lane 2:
Mouse kidney lysates at 20 µg

Secondary

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

Predicted band size: 97 kDa

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