abcam

ab177939

Anti-eIF1A antibody [EPR12466(B)]

Recombinant | RabMAb

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	EPR12466(B)
Purification technique	Affinity purification Protein A
Concentration	0.648 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/350
Notes	**For unpurified use at 1/50 - 1/100.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

Species	Mouse
Dilution info	1/10000 - 1/50000
Notes	-

Species	Rat
Dilution info	1/10000 - 1/50000
Notes	-

ICC/IF

Tested

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

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60
Notes	-

Expected

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

Target data

See full target information EIF1AX

Function

Component of the 43S pre-initiation complex (43S PIC), which binds to the mRNA cap-proximal region, scans mRNA 5'-untranslated region, and locates the initiation codon (PubMed:9732867). This protein enhances formation of the cap-proximal complex (PubMed:9732867). Together with EIF1, facilitates scanning, start codon recognition, promotion of the assembly of 48S complex at the initiation codon (43S PIC becomes 48S PIC after the start codon is reached), and dissociation of aberrant complexes (PubMed:9732867). After start codon location, together with EIF5B

orients the initiator methionine-tRNA in a conformation that allows 60S ribosomal subunit joining to form the 80S initiation complex (PubMed:35732735). Is released after 80S initiation complex formation, just after GTP hydrolysis by EIF5B, and before release of EIF5B (PubMed:35732735). Its globular part is located in the A site of the 40S ribosomal subunit (PubMed:35732735). Its interaction with EIF5 during scanning contribute to the maintenance of EIF1 within the open 43S PIC (PubMed:24319994). In contrast to yeast orthologs, does not bind EIF1 (PubMed:24319994).

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	EIF1A also known as Eukaryotic Initiation Factor 1A plays an important role in the process of initiating translation. It has a mass of approximately 17.5 kDa. This

	factor is expressed in various tissues playing a role in forming the pre-initiation complex ensuring mRNA and ribosomal alignment. eIF1A's structure and binding capabilities make it an essential component for the fidelity and efficiency of translation initiation.
Biological function summary	EIF1A functions as part of the eukaryotic translation initiation complex. It stabilizes the binding of the small ribosomal subunit to mRNA. eIF1A works closely with other initiation factors including eIF1 eIF3 and eIF5 to facilitate the proper scanning of mRNA for the correct start codon. This precise role in translation initiation serves as a regulatory point for protein synthesis in cells.
Pathways	EIF1A engages in the mRNA translation pathway particularly in the initiation phase. It is critical in ensuring the mRNA translation accuracy by preventing premature joining of the large ribosomal subunit. eIF1A associates with proteins like eIF3 and eIF2 during the initial stages of translation. This involvement ensures cellular homeostasis and efficient cellular response to various stimuli.
Associated diseases and disorders	EIF1A may influence cancer development and progression. Alterations in its expression levels or mutations can disrupt normal translation processes potentially leading to oncogenesis. Research indicates a connection between eIF1A and tumor suppressor proteins highlighting its impact on cellular proliferation. Additionally eIF1A may relate to neurodegenerative disorders by affecting proteins such as eIF2 impacting neuronal translation control and protein synthesis regulation.

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

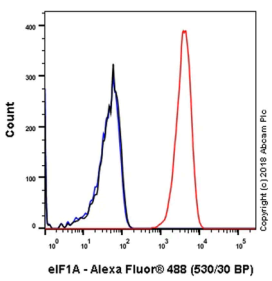
We do not recommend this combination. It is not covered by our product promise.

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:

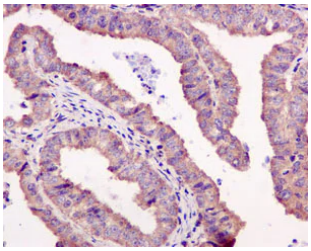
10 product images



Flow Cytometry (Intracellular) - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Flow Cytometry (Intracellular) staining using rabbit Anti-eIF1A antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling eIF1A with Purified ab177939 at 1/60 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 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).

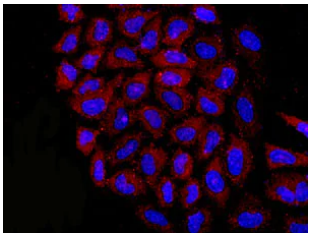


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-eIF1A antibody

Immunohistochemical analysis of paraffin-embedded Human endometrial carcinoma tissue labeling EIF1AX with ab177939 at 1/50 dilution.
This image was generated using the unpurified version of the product.

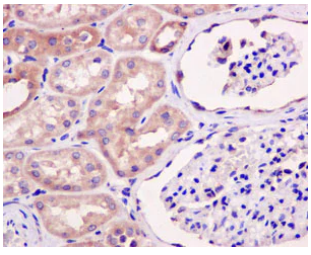
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-eIF1A antibody

Immunofluorescent analysis of HeLa cells labeling EIF1AX with ab177939 at 1/50 dilution (red). DAPI nuclear staining (blue).
This image was generated using the unpurified version of the product.

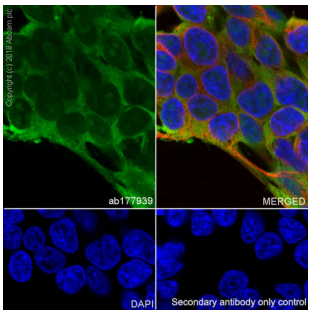


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-eIF1A antibody

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling EIF1AX with ab177939 at 1/50 dilution.
This image was generated using the unpurified version of the product.

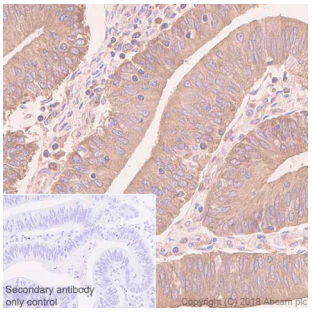
Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-eIF1A antibody

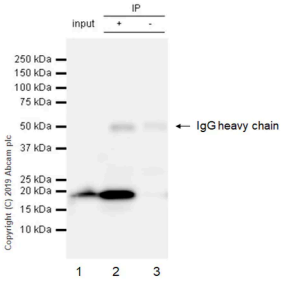
Immunocytochemistry/ Immunofluorescence analysis of 293T (Human embryonic kidney epithelial cell) cells labeling eIF1A with Purified ab177939 at 1:100 dilution (5.7 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha 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 nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

EIF1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-eIF1A antibody

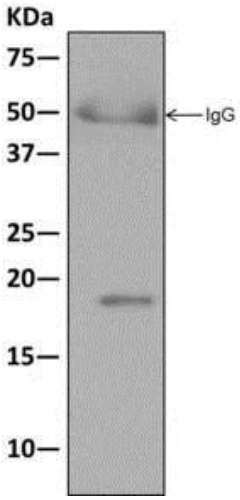
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human endometrium cancer tissue sections labeling eIF1A with Purified ab177939 at 1:350 dilution (1.61 µg/ml). Heat mediated antigen retrieval was performed using Citrate buffer, pH 6.0. ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunoprecipitation - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

ab177939 (purified) at 1:30 dilution (2µg) immunoprecipitating eIF1A in HeLa whole cell lysate.
Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10µg
Lane 2 (+): ab177939 & HeLa whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab177939 in HeLa whole cell lysate
For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1:1000 dilution.
Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

Predicted band size: 16 kDa

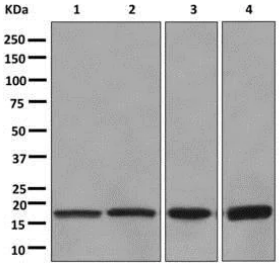


Immunoprecipitation - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

Western blot analysis on immunoprecipitation pellet from A375 cell lysate immunoprecipitated using ab177939 at 1/10 dilution.
This image was generated using the unpurified version of the product.

All lanes:
Immunoprecipitation - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

Predicted band size: 16 kDa



Western blot - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

This image was generated using the unpurified version of the product.
All lanes:
Western blot - Anti-eIF1A antibody [EPR12466(B)] (ab177939) at 1/10000 dilution

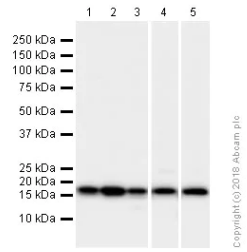
Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Jurkat cell lysate at 10 µg

Lane 3:
A375 cell lysate at 10 µg

Lane 4:
293T cell lysate at 10 µg

Predicted band size: 16 kDa



Western blot - Anti-eIF1A antibody [EPR12466(B)] (ab177939)

All lanes:
Western blot - Anti-eIF1A antibody [EPR12466(B)] (ab177939) at 1/10000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 20 µg

Lane 2:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysates at 20 µg

Lane 3:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysates at 20 µg

Lane 4:
Mouse brain lysates at 20 µg

Lane 5:
Rat brain lysates at 20 µg

Secondary

All lanes:

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

Predicted band size: 16 kDa

Observed band size: 16 kDa

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