abcam

ab181467

Anti-eIF2A antibody [3A7B11]

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human EIF2A aa 400-600. The exact immunogen used to generate this antibody is proprietary information. Database link Q9BY44
Clone number	3A7B11
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Species	Rat
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Species	African green monkey
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Species	Rat
Dilution info	1/500 - 1/2000
Notes	-

Species	African green monkey
Dilution info	1/500 - 1/2000

Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Expected

Species	Mouse
Dilution info	1/200 - 1/1000
Notes	-

Species	Rat
Dilution info	1/200 - 1/1000
Notes	-

Species	African green monkey
Dilution info	1/200 - 1/1000
Notes	-

Target data

See full target information EIF2A

Function	Functions in the early steps of protein synthesis of a small number of specific mRNAs. Acts by directing the binding of methionyl-tRNAi to 40S ribosomal subunits. In contrast to the eIF-2 complex, it binds methionyl-tRNAi to 40S subunits in a codon-dependent manner, whereas the eIF-2 complex binds methionyl-tRNAi to 40S subunits in a GTP-dependent manner.

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

Supplementary info

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

Activity summary	The eIF2A also referred to as eukaryotic translation initiation factor 2A is a protein involved in the initiation of mRNA translation. The eIF2A protein is distinct from eIF2α despite the similarity in their names. Its molecular weight is approximately 65 kDa. Expression of eIF2A occurs mainly in the cytoplasm of cells where it participates in the protein synthesis process. eIF2A functions as a mediator that targets the initiator methionylated-tRNA to the small ribosomal subunit in a manner independent from eIF2 complex.
Biological function summary	EIF2A impacts the translation mechanism by facilitating the binding of Met-tRNAi to the ribosome under particular conditions especially during stress responses where canonical eIF2 might be inhibited. It operates independently from the larger eIF2 complex which also includes eIF2β and eIF2γ subunits. This independent activity allows eIF2A to serve as a backup mechanism for translation initiation when the normal pathway is impaired.
Pathways	Translation regulation involves interaction with cellular stress pathways and the integrated stress response (ISR). eIF2A operates within pathways that respond to physiological stresses such as nutrient deprivation and oxidative stress which trigger alterations in protein synthesis rates. eIF2A is related to the eIF2 kinase which phosphorylates the α subunit of eIF2 leading to a general reduction in translation initiation under stress allowing selective translation of stress-response proteins.
Associated diseases and disorders	Irregularities in eIF2A function link to neurodegenerative diseases such as Alzheimer's disease and metabolic disorders like diabetes. These conditions often involve disruptions in the stress response pathways where eIF2A participates. The protein participates with others like PERK a kinase that phosphorylates eIF2α under endoplasmic reticulum stress contributing to disease-related changes in protein synthesis. By modulating translation under stress eIF2A becomes significant in these pathological contexts.

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

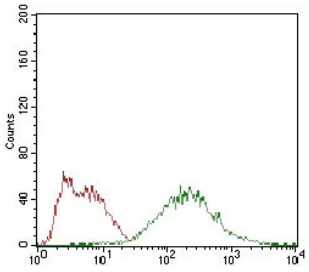
We do not recommend this combination. It is not covered by our product promise.

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.

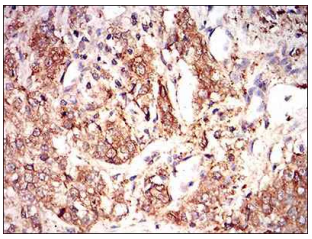
7 product images



Flow Cytometry - Anti-eIF2A antibody [3A7B11] (ab181467)

EIF2A Flow Cytometry staining using mouse Anti-eIF2A antibody

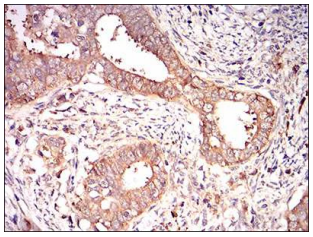
Flow cytometric analysis of HepG2 cells labeling eIF2A with ab181467 at 1/200 dilution (green) compared to a negative control (red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF2A antibody [3A7B11] (ab181467)

EIF2A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-eIF2A antibody

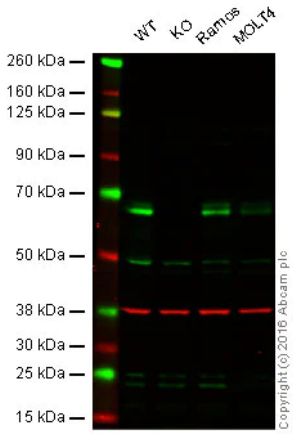
Immunohistochemical analysis of paraffin-embedded Human bladder cancer tissue labeling eIF2A with ab181467 at 1/200 dilution with DAB staining.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eIF2A antibody [3A7B11] (ab181467)

EIF2A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-eIF2A antibody

Immunohistochemical analysis of paraffin-embedded Human cervical cancer tissue labeling eIF2A with ab181467 at 1/200 dilution with DAB staining.

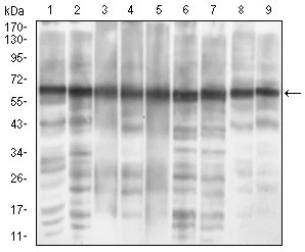


Western blot - Anti-eIF2A antibody [3A7B11] (ab181467)

EIF2A Western blot staining using mouse Anti-eIF2A antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: eIF2A knockout HAP1 cell lysate (20 µg)
Lane 3: Ramos cell lysate (20 µg)
Lane 4: MOLT4 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab181467 observed at 65 kDa. Red - loading control, ab181602, observed at 37 kDa.
ab181467 was shown to recognize eIF2A when eIF2A knockout samples were used, along with additional cross-reactive bands. Wild-type and eIF2A knockout samples were subjected to SDS-PAGE. ab181467 and ab181602 (loading control to GAPDH) were diluted at 1/500 and 1/10000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed ab216772 and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed ab216777 secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-eIF2A antibody [3A7B11] (ab181467)

Predicted band size: 65 kDa



Western blot - Anti-eIF2A antibody [3A7B11] (ab181467)

All lanes:
Western blot - Anti-eIF2A antibody [3A7B11] (ab181467) at 1/500 dilution

Lane 1:
MCF7 cell lysate

Lane 2:
PC-12 cell lysate

Lane 3:
HepG2 cell lysate

Lane 4:
HeLa cell lysate

Lane 5:
COS-7 cell lysate

Lane 6:
K562 cell lysate

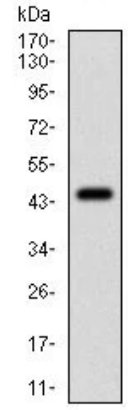
Lane 7:
Jurkat cell lysate

Lane 8:

A431 cell lysate

Lane 9:
NIH3T3 cell lysate

Predicted band size: 65 kDa

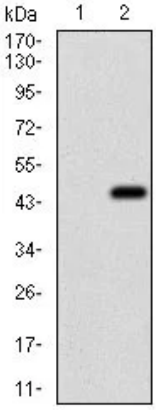


Western blot - Anti-eIF2A antibody [3A7B11] (ab181467)

Expected MWt is 40.3 kDa.
All lanes:
Western blot - Anti-eIF2A antibody [3A7B11] (ab181467) at 1/500 dilution

All lanes:
Recombinant Human eIF2A (aa 448-576) protein

Predicted band size: 65 kDa



Western blot - Anti-eIF2A antibody [3A7B11] (ab181467)

All lanes:
Western blot - Anti-eIF2A antibody [3A7B11] (ab181467) at 1/500 dilution

Lane 1:
Non-transfected HEK293 cell lysate

Lane 2:
eIF2A (aa 448-576)-hIgGFc transfected HEK293 cell lysate

Predicted band size: 65 kDa

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