abcam

ab240142

Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free

Recombinant | RabMAb

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	EPR9471
Purification technique	Affinity purification Protein A
Specificity	The immunogen used for this product shares 6 continuous identical amino acids with eEF1A2. Cross-reactivity with this protein has not been confirmed experimentally. EE1AL3/EEF1A1P5 it's a suspected pseudogene (https://www.ncbi.nlm.nih.gov/gene/158078). Our validation shows that this clone is able to detect Recombinant EF1AL3/EEF1A1P5 but endogenous protein expression is yet unknown.
Concentration	0.991 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human

Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Recombinant full length protein - Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information EEF1A1

Function

Translation elongation factor that catalyzes the GTP-dependent binding of aminoacyl-tRNA (aa-tRNA) to the A-site of ribosomes during the elongation phase of protein synthesis (PubMed:26593721, PubMed:26651998, PubMed:36123449, PubMed:36264623, PubMed:36638793). Base pairing between the mRNA codon and the aa-tRNA anticodon promotes GTP hydrolysis, releasing the aa-tRNA from EEF1A1 and allowing its accommodation into the ribosome (PubMed:26593721, PubMed:26651998, PubMed:36123449, PubMed:36264623, PubMed:36638793). The growing protein chain is subsequently transferred from the P-site peptidyl tRNA to the A-site aa-tRNA, extending it by one amino acid through ribosome-catalyzed peptide bond formation (PubMed:26593721, PubMed:26651998, PubMed:36123449, PubMed:36264623). Also plays a role in the positive regulation of IFNG transcription in T-helper 1 cells as part of an IFNG promoter-binding complex with TXK and PARP1 (PubMed:17177976). Also plays a role in cytoskeleton organization by promoting actin bundling (By similarity). (Microbial infection) Required for the translation of viral proteins and viral replication during human coronavirus SARS-CoV-2 infection.

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

ab240142 is the carrier-free version of ab157455.

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	The eEF1A1 also known as EF-Tu or eEF1A1-L3 is an elongation factor involved in protein synthesis. It facilitates the delivery of aminoacyl-tRNA to the A-site of the ribosome during translation. eEF1A1 exhibits a mass of approximately 50 kDa and is widely expressed in various tissues including the brain heart and skeletal muscle. Its expression level varies indicating that it plays a consistent role in translation machinery but may have tissue-specific functions.
Biological function summary	This elongation factor is important in promoting the accuracy and efficiency of protein translation. It interacts with several components of the protein synthesis machinery and forms part of a larger translational complex. eEF1A1 is involved in ensuring the correct amino acids are added during protein synthesis which affects

	protein structure and function. In addition to its canonical role it also engages in processes such as actin filament binding nuclear transport and other cell maintenance tasks.
Pathways	The activities of eEF1A1 intersect with key processes involved in cellular growth and proliferation. It plays a significant role in the mTOR signaling pathway which regulates cell growth by controlling protein synthesis. eEF1A1 also interacts with proteins like Rheb an important player in mTOR signaling. By participating in these pathways eEF1A1 links translation with broader regulatory networks that control cell metabolism.
Associated diseases and disorders	EEF1A1 has connections to cancer and neurodegenerative diseases. Its elevated expression is often observed in several cancer types suggesting a role in tumorigenesis. Additionally misregulation of eEF1A1 may contribute to neurodegenerative disorders such as Alzheimer's disease where alterations in protein synthesis pathways are common. The protein's interaction with tau known in neuropathological conditions highlights its impact on neurodegeneration.

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

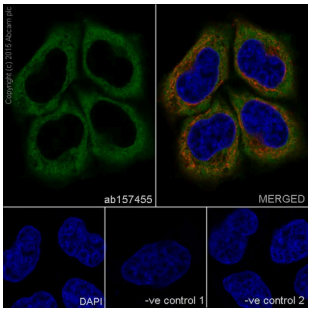
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



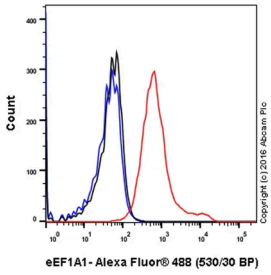
Immunocytochemistry/ Immunofluorescence - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free (ab240142)

EEF1A1/EF-Tu + EE1AL3/EEF1A1P5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa (human cervix adenocarcinoma) cells labelling eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 with purified ab157455 at 1/100. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.
Control 1: primary antibody (1/100) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).

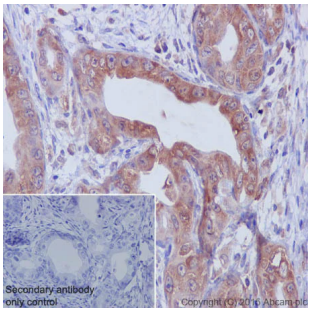
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157455).



Flow Cytometry (Intracellular) - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free (ab240142)

EEF1A1/EF-Tu + EE1AL3/EEF1A1P5 Flow Cytometry (Intracellular) staining using rabbit Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody

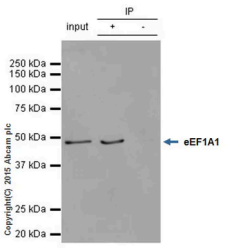
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 with purified ab157455 at 1/50 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) was used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157455).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free (ab240142)

EEF1A1/EF-Tu + EE1AL3/EEF1A1P5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cervix carcinoma tissue labelling eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 with purified ab157455 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a goat anti-rabbit IgG H&L (HRP) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157455).



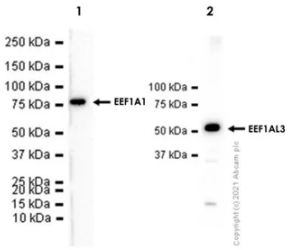
Immunoprecipitation - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free (ab240142)

ab157455 (purified) at 1/30 immunoprecipitating eEF1A1/EF-Tu in HeLa whole cell lysate. 10 ug of cell lysate was present in the input. For western blotting, a HRP-conjugated Veriblot for IP Detection Reagent (ab131366) was used for detection at 1/1,500 dilution. A rabbit monoclonal IgG (ab172730) was used intead of ab128913 as a negative control (Lane 3).
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157455).

All lanes:
Immunoprecipitation - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] (ab157455)



Western blot - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] - BSA and Azide free (ab240142)

EEF1A1/EF-Tu + EE1AL3/EEF1A1P5 Western blot staining using rabbit Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody

Exposure time:
Lane 1: 180 seconds

Lane 2: 5 seconds

EE1AL3/EEF1A1P5 it's a suspected pseudogene (https://www.ncbi.nlm.nih.gov/gene/158078). Our validation shows that this clone is able to detect Recombinant EF1AL3/EEF1A1P5 but endogenous protein expression is yet unknown.

All lanes:
Western blot - Anti-eEF1A1/EF-Tu + EE1AL3/EEF1A1P5 antibody [EPR9471] (ab157455) at 1/1000 dilution

Lane 1:
GST tagged Recombinant Human EEF1A1 protein (Full length, 76 KDa)

Lane 2:
His tagged Recombinant Human EEF1AL3 protein (Full length, 52 KDa)

Secondary

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

Predicted band size: 50 kDa

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