abcam

ab173322

Anti-eIF4EBP1 antibody [Y330] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	Y330
Purification technique	Affinity purification Protein A
Specificity	This antibody recognises 4E-BP1 (eIF4E-binding protein) also known as PHAS.
Concentration	0.993 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information EIF4EBP1

Function Repressor of translation initiation that regulates EIF4E activity by preventing its assembly into the eIF4F complex: hypophosphorylated form competes with EIF4G1/EIF4G3 and strongly binds to EIF4E, leading to repress translation. In contrast, hyperphosphorylated form dissociates from EIF4E, allowing interaction between EIF4G1/EIF4G3 and EIF4E, leading to initiation of translation. Mediates the regulation of protein translation by hormones, growth factors and other stimuli that signal through the MAP kinase and mTORC1 pathways.

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

ab173322 is the carrier-free version of ab32130.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	EIF4EBP1 also known as 4EBP1 or p4EBP1 is an important protein that acts as a translational repressor by binding to eIF4E therefore inhibiting cap-dependent translation. The molecular weight of 4EBP1 is approximately 12 kDa. This protein is

	ubiquitously expressed in various tissues indicating its widespread involvement in cellular functions. eIF4EBP1 can be detected and quantified using techniques like the eIF4EBP1 ELISA making it a common target in research for its role in translation regulation.
Biological function summary	EIF4EBP1 plays an important role in regulating cell growth and proliferation by modulating protein synthesis. It is a part of the eIF4F complex which is responsible for the initiation of mRNA translation. When hypophosphorylated eIF4EBP1 binds tightly to eIF4E and prevents the assembly of the active eIF4F complex leading to reduced translation initiation of mRNAs involved in growth and survival. This regulation is important in conditions where cells need to adapt to metabolic stress or external signals.
Pathways	The mammalian target of rapamycin (mTOR) pathway regulates eIF4EBP1 through phosphorylation. In response to growth signals mTOR phosphorylates eIF4EBP1 causing the release of eIF4E and allowing mRNA translation to proceed. This interaction links eIF4EBP1 to the PI3K/AKT/mTOR signaling pathway which influences cell cycle progression and survival. Related proteins in this pathway include ribosomal protein S6 kinase (S6K1) which is also phosphorylated by mTOR to promote protein synthesis.
Associated diseases and disorders	Deregulation of eIF4EBP1 has been implicated in cancer and neurological disorders. In cancer hyperactive mTOR signaling can lead to excessive phosphorylation of 4EBP1 decreasing its ability to inhibit eIF4E and enhancing translation of oncogenic proteins. In neurological disorders imbalanced eIF4EBP1 activity can disrupt synaptic plasticity and memory formation. Proteins such as p70S6K which are also part of the mTOR pathway share connections with eIF4EBP1 in these pathological conditions.

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

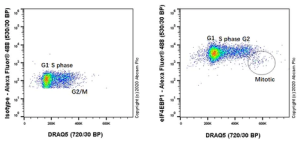
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images

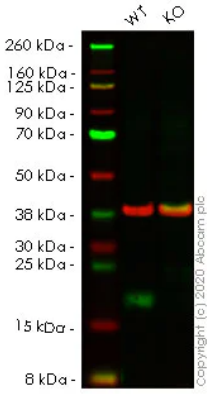


Flow Cytometry (Intracellular) - Anti-eIF4EBP1 antibody [Y330] - BSA and Azide free (ab173322)

EIF4EBP1 Flow Cytometry (Intracellular) staining using rabbit Anti-eIF4EBP1 antibody

This data was developed using ab32130, the same antibody clone in a different buffer formulation.

Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling eIF4EBP1 with purified ab32130 at 1/1000 dilution (1 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Left). Low expression in mitotic phase was consistent with literature. (PMID: 11553333)



Western blot - Anti-eIF4EBP1 antibody [Y330] - BSA and Azide free (ab173322)

EIF4EBP1 Western blot staining using rabbit Anti-eIF4EBP1 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32130).
Lanes 1-2: Merged signal (red and green). Green - ab32130 observed at 13 kDa. Red - loading control ab8245 observed at 37 kDa.

ab32130 Anti-eIF4EBP1 antibody [Y330] was shown to specifically react with eIF4EBP1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab264784 (knockout cell lysate ab257146) was used. Wild-type and eIF4EBP1 knockout samples were subjected to SDS-PAGE. ab32130 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 Dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-eIF4EBP1 antibody [Y330] (ab32130) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human EIF4EBP1 knockout HeLa cell lysate (ab257146) at 20 µg

Performed under reducing conditions.

Predicted band size: 13 kDa, 36 kDa

Observed band size: 13 kDa

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