abcam

ab278686

Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5]

Recombinant | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human EIF4EBP1 pT37 + T46. The exact immunogen used to generate this antibody is proprietary information. Database link Q13541
Clone number	4EB1T37T46-A5
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Rat

Dilution info	0.001-1 µg/mL
Notes	-

Species	Human
Dilution info	0.001-1 µg/mL
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	0.001 µg/mL
Notes	-

Species	Human
Dilution info	0.001 µg/mL
Notes	-

Expected

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

IHC-P

Tested

Species	Rat
Dilution info	-

Notes	-

Expected

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

Target data

See full target information EIF4EBP1 pT37 + T46

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 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

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	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.

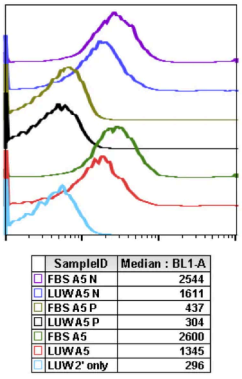
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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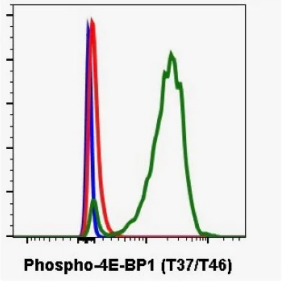
5 product images



Flow Cytometry - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686)

EIF4EBP1 (phospho T37 + T46) Flow Cytometry staining using rabbit Anti-eIF4EBP1 (phospho T37 + T46) antibody

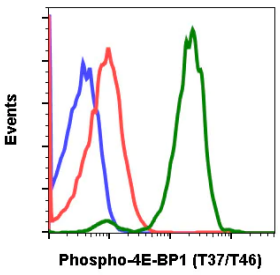
Peptide blocking flow cytometric analysis of Jurkat cells LY294002 plus wortmannin plus U0126 LWU) treated cells stained with secondary antibody as negative control (light blue) or treated with LWU (red) or treated with FBS (green) or LUW and blocked with phospho-peptide (black) or FBS and blocked with phospho peptide (gold) or LUW and blocked with non-phospho peptide (dark blue) or FBS and blocked with non-phospho peptide (purple) using ab278686 at 0.1µg/mL.



Flow Cytometry - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686)

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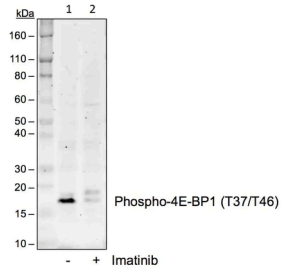
Flow cytometric analysis of Jurkat cells secondary antibody only negative control (blue) or treated with LY294002 + U0126 + wortmanmin (red) or with FBS (green) using 0.1 ug/mL of ab278686.



Flow Cytometry - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686)

EIF4EBP1 (phospho T37 + T46) Flow Cytometry staining using rabbit Anti-eIF4EBP1 (phospho T37 + T46) antibody

Flow cytometric analysis of C6 cells untreated cells stained with secondary antibody as negative control (blue) or untreated (red) or treated with UV and TPA (green) and stained using ab278686 at 0.1µg/mL.



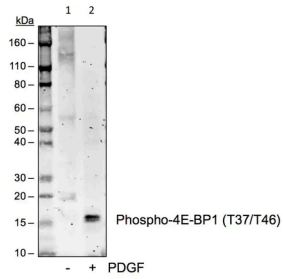
Western blot - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686)

All lanes:
Western blot - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686) at 0.001 µg/mL

Lane 1:
K562 cell extract untreated

Lane 2:
K562 cell extract treated with imatinib

Predicted band size: 13 kDa



Western blot - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686)

All lanes:
Western blot - Anti-eIF4EBP1 (phospho T37 + T46) antibody [4EB1T37T46-A5] (ab278686) at 0.001 µg/mL

Lane 1:
NIH3T3 cell extract untreated

Lane 2:
NIH3T3 cell extract treated with PDGF

Predicted band size: 13 kDa

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