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Phospho-4E-BP1-T45 Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AE1002b

Specification

Phospho-4E-BP1-T45 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	Q13541
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Concentration	**1mg/ml**
Isotype	**Rabbit IgG**
Calculated MW	**12580**

Phospho-4E-BP1-T45 Antibody - Additional Information

Gene ID 1978

Other Names
Eukaryotic translation initiation factor 4E-binding protein 1, 4E-BP1, eIF4E-binding protein 1, Phosphorylated heat- and acid-stable protein regulated by insulin 1, PHAS-I, EIF4EBP1

Target/Specificity
The antibody was affinity-purified from rabbit antiserum using epitope-specific phosphopeptide column, and the antibody against non-phosphopeptide was removed using non-phosphopeptide column corresponding to the phosphorylation site.

Dilution
WB~~1:500~1:1000
IHC~~1:50~1:100

Format
affinity Purified IgG, in PBS, 0.02% sodium azide and 50% glycerol.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Phospho-4E-BP1-T45 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-4E-BP1-T45 Antibody - Protein Information

Name 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.

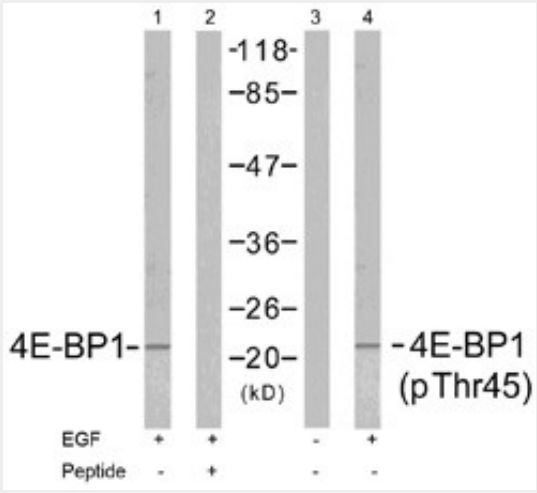
Cellular Location
Cytoplasm. Nucleus. Note=Localization to the nucleus is unaffected by phosphorylation status. {ECO:0000250|UniProtKB:Q60876}

Phospho-4E-BP1-T45 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

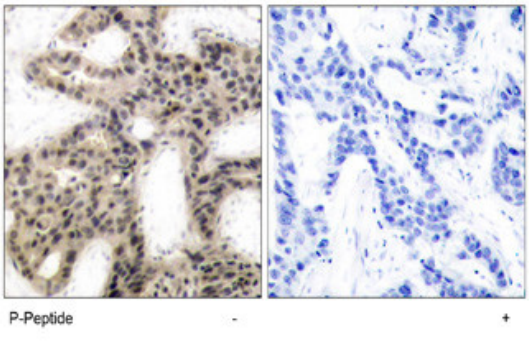
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Phospho-4E-BP1-T45 Antibody - Images



Western blot analysis of extracts from MDA435 cells untreated or treated with EGF (200nm, 5min), using 4E-BP1 Antibody (T45) (AE1002a, Lane1 and 2) and Phospho-4E-BP1-T45 Antibody (#AE1002b, Lane 3 and 4).

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Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using Phospho-4E-BP1-T45 Antibody (#AE1002b).

Phospho-4E-BP1-T45 Antibody - Background

This gene encodes one member of a family of translation repressor proteins. The protein directly interacts with eukaryotic translation initiation factor 4E (eIF4E), which is a limiting component of the multisubunit complex that recruits 40S ribosomal subunits to the 5' end of mRNAs. Interaction of this protein with eIF4E inhibits complex assembly and represses translation. This protein is phosphorylated in response to various signals including UV irradiation and insulin signaling, resulting in its dissociation from eIF4E and activation of mRNA translation.

Phospho-4E-BP1-T45 Antibody - References

4E-BP1 is a key effector of the oncogenic activation of the AKT and ERK signaling pathways that integrates their function in tumors. She QB, et al. Cancer Cell, 2010 Jul 13. PMID 20609351.
Use of genome-wide expression data to mine the Gray Zone of GWA studies leads to novel candidate obesity genes. Naukkarinen J, et al. PLoS Genet, 2010 Jun 3. PMID 20532202.
Human cytomegalovirus UL69 protein facilitates translation by associating with the mRNA cap-binding complex and excluding 4EBP1. Aoyagi M, et al. Proc Natl Acad Sci U S A, 2010 Feb 9. PMID 20133758.
The Parkinson's disease associated LRRK2 exhibits weaker in vitro phosphorylation of 4E-BP compared to autophosphorylation. Kumar A, et al. PLoS One, 2010 Jan 15. PMID 20090955.
RhoE inhibits 4E-BP1 phosphorylation and eIF4E function impairing cap-dependent translation. Villalonga P, et al. J Biol Chem, 2009 Dec 18. PMID 19850923.