

4E-BP1 Antibody
Catalog # ASC10320

Specification

4E-BP1 Antibody - Product Information

Application	IHC
Primary Accession	Q13541
Other Accession	NP_004086 , 1978
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	4E-BP1 antibody can be used for the detection of 4E-BP1 by Western blot at 2.5 - 10 µg/mL. Antibody can also be used for immunocytochemistry starting at 2 µg/mL. For immunofluorescence start at 20 µg/mL.

4E-BP1 Antibody - Additional Information

Gene ID **1978**

Other Names

4E-BP1 Antibody: BP-1, 4EBP1, 4E-BP1, PHAS-I, Eukaryotic translation initiation factor 4E-binding protein 1, Phosphorylated heat- and acid-stable protein regulated by insulin 1, eukaryotic translation initiation factor 4E binding protein 1

Target/Specificity

4E-BP1 antibody was raised against a 14 amino acid synthetic peptide from near the carboxy terminus of human 4E-BP1. The immunogen is located within the last 50 amino acids of 4E-BP1.

Reconstitution & Storage

4E-BP1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions

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

4E-BP1 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

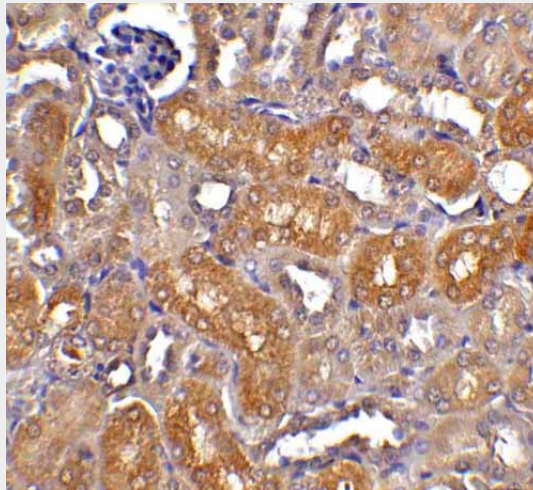
Cytoplasm. Nucleus. Note=Localization to the nucleus is unaffected by phosphorylation status.
{ECO:0000250|UniProtKB:Q60876}

4E-BP1 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 Cytometry](#)
- [Cell Culture](#)

4E-BP1 Antibody - Images



Immunohistochemistry of CAD in mouse kidney tissue with CAD antibody at 5 µg/ml.

4E-BP1 Antibody - Background

4E-BP1 Antibody: The translation of mRNA in eukaryotic cells is regulated by the presence of amino acids through multiple mechanisms. One such mechanism involves the evolutionarily conserved serine/threonine kinase TOR (Target of rapamycin, also known as mTOR), which regulates cell growth and cell cycle through its ability to integrate signals from nutrient levels and growth factors. One downstream target of TOR is the eukaryotic initiation factor 4E binding protein 1 (4E-BP1) whose phosphorylation prevents its association with eIF4E, preferentially stimulating translation of mRNAs containing long, highly structured 5'-UTRs. Rapamycin inhibits TOR resulting in reduced cell growth and reduced rates of cell cycle and cell proliferation, at least in part by inhibiting the activity of TOR towards 4E-BP1.

4E-BP1 Antibody - References

Shah OJ, Anthony JC, Kimball SR, et al. 4E-BP1 and S6K1: translational integration sites for nutritional and hormonal information in muscle. *Am. J. Physiol. Endocrinol. Metab.* 2000; 279:E715-29.

Shamji AF, Ngheim P, and Schreiber SL. Integration of growth factor and nutrient signaling: implications for cancer biology. *Mol. Cell* 2003; 12:271-80.