4E-BP1 [pT46] ABfinity™ Recombinant Rabbit Monoclonal Antibody - Purified

REF Catalog no. 700397

(See product label for lot information)

Clone/PAD: 34H90L46
Isotype: IgG
Gene ID: 1978
Protein Acc. No.: Q13541
Qty: 100 µg
Volume: 200 µl
Concentration: 0.5 mg/ml

Formulation
PBS + 0.09% sodium azide

Immunogen
A peptide corresponding to amino acids 43-56 of Q13541.

Immunogen sequence
FST[pT]PGGTRIIYDR

Reactivity
This antibody reacts with Human 4E-BP1 [pT46]. Based on sequence similarity, reactivity to Rhesus monkey, mouse, rat, bovine, zebrafish and chicken is expected.

Specificity
This antibody is specific for pT46 and does not recognize non-phosphorylated 4E-BP1 protein.

Storage
2-8°C for up to 1 mo, -20°C for long term storage. Avoid repeated freezing and thawing.

Expiration Date
Expires one year from date of receipt when stored as instructed.

Validated Applications:

	Species	Test Material	Concentration
Western Blotting	human	Jurkat	0.5-2 µg/ml
Sandwich ELISA	Detector		1-5 µg/ml

Background
Eukaryotic initiation factor 4E binding protein 1 (4E-BP1) is a ~20 kDa member of a family of eIF4E-binding proteins whose binding affinity to eIF4E is regulated by its phosphorylation. It inhibits cap-dependent translation by binding to eIF4E on the same site that overlaps the binding site for eIF4G, preventing its binding to the latter and eventually leading to an increase in mRNA translation (1,2). The phosphorylation of 4E-BP1 is critical in determining cell fate by controlling translation initiation and apoptotic potency (3). 4E-BP1 is hyperphosphorylated in response to several external stimuli including hormones, growth factors, mitogens, cytokines and G-protein–coupled receptors and in response to stress conditions including nutrient deprivation (5-7). The phosphorylation of 4E-BP1 increases in response to activated phosphoinositol 3'-kinase (PI-3K) or its downstream effector Akt/PKB (4). 4E-BP1 is believed to mediate PI-3K and FRAP/mTOR signaling and is phosphorylated on at least six serine and threonine sites (Thr 37, Thr 46, Ser 65, Thr 70, Ser 83, and Ser 112)(8). The phosphorylation of these sites is believed to occur in an orderly fashion where phosphorylation of threonine 37 and 46 by FRAP/mTOR is a priming step for subsequent phosphorylation of 4E-BP1 at the carboxy-terminal sites. Under normoxic conditions, increased VEGF expression, resulting from inhibition of 4E-BP1, contributes to efficient angiogenesis and metastatic brain growth through activated integrin αvβ3 (9).

References

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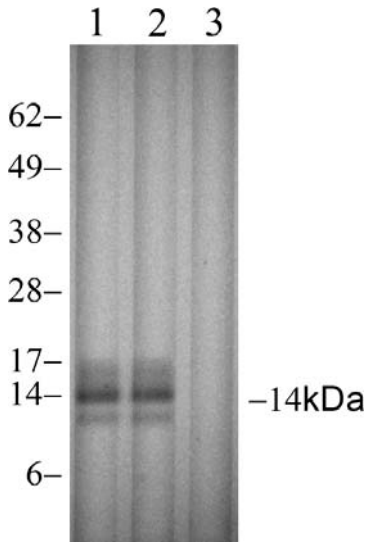

Western blot of Jurkat lysates labeled with rabbit anti-4E-BP1 [pT46] (Cat. No. 700397).

Rabbit anti-4E-BP1 [pT46] (1 µg/ml) was used to label 4E-BP1 [pT46] in Jurkat lysates (lane 1). Pre-incubation with the phosphopeptide used as an immunogen eliminated the signal (lane 3) whereas pre-incubation with the non-phosphopeptide did not (lane 2).

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