Revision 3

Store at -20C

#2845

4E-BP2 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-P	H M R Mk B	Endogenous	15 to 20	Rabbit	#Q13542	1979

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:200 - 1:800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

4E-BP2 Antibody detects endogenous levels of total 4E-BP2, independent of phosphorylation. This antibody does not cross-react significantly with 4E-BP1.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues at the carboxy-terminus of human 4E-BP2. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Translation repressor protein 4E-BP1 (also known as PHAS-1) inhibits cap-dependent translation by binding to the translation initiation factor eIF4E. Hyperphosphorylation of 4E-BP1 disrupts this interaction and results in activation of cap-dependent translation (1). Both the PI3 kinase/Akt pathway and FRAP/mTOR kinase regulate 4E-BP1 activity (2,3). Multiple 4E-BP1 residues are phosphorylated *in vivo* (4). While phosphorylation by FRAP/mTOR at Thr37 and Thr46 does not prevent the binding of 4E-BP1 to eIF4E, it is thought to prime 4E-BP1 for subsequent phosphorylation at Ser65 and Thr70 (5).
4E-BP2 and 4E-BP3 share high sequence homology with 4E-BP1, including conservation of the major FRAP/mTOR-dependent phosphorylation sites. Preliminary data suggests that phosphorylation of 4E-BP2 is regulated in a similar manner to that of 4E-BP1, although phosphorylation of this protein has not been as extensively studied (6).

Background References

1. Pause, A. et al. (1994) *Nature* 371, 762-7.
2. Brunn, G.J. et al. (1997) *Science* 277, 99-101.
3. Gingras, A.C. et al. (1998) *Genes Dev* 12, 502-13.
4. Fadden, P. et al. (1997) *J Biol Chem* 272, 10240-7.
5. Gingras, A.C. et al. (1999) *Genes Dev* 13, 1422-37.
6. Lin, T.A. and Lawrence, Jr, J.C. (1996) *J. Biol. Chem.* 271, 30199-30204.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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