Revision 1

#3591 Store at -20C

Phospho-eIF4B (Ser422) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	80	Rabbit	#P23588	1975

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

Phospho-eIF4B (Ser422) Antibody detects eIF4B only when phosphorylated at Ser422.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser422 of human eIF4B. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Eukaryotic initiation factor 4B (eIF4B) is thought to assist the eIF4F complex in translation initiation. In plants, eIF4B is known to interact with the poly-(A) binding protein, increasing its poly-(A) binding activity (1). Heat shock and serum starvation cause dephosphorylation of eIF4B at multiple sites with kinetics similar to those of the corresponding inhibition of translation, while phosphorylation of eIF4B following insulin treatment correlates well with an observed increase in translation (2-5). Multiple kinases, including p70 S6 kinase, can phosphorylate eIF4B *in vitro*, and at least one serum-inducible eIF4B phosphorylation site is sensitive to rapamycin and LY294002 (6). Recently, Ser406 was identified as a novel phosphorylation site regulated by mitogens (7), and the phosphorylation of this site is dependent on MEK and mTOR activity (7). This phosphorylation is shown to be essential for the translational activity of eIF4B (7).
p70 S6 Kinase has been shown to phosphorylate eIF4B at the rapamycin-sensitive site Ser422 in vivo, and a Ser422Ala mutant of eIF4B shows deminished activity in an in vitro translation assay (7).

Background References

1. Le, H. et al. (1997) *J. Biol. Chem.* 272, 16247-16255.
2. Duncan, R.F. and Hershey, J.W. (1989) *J. Cell Biol.* 109, 1467-1481.
3. Duncan, R.F. and Hershey, J.W. (1984) *J. Biol. Chem.* 259, 11882-11889.
4. Duncan, R. and Hershey, J.W. (1985) *J. Biol. Chem.* 260, 5493-5497.
5. Manzella, J.M. et al. (1991) *J. Biol. Chem.* 266, 2383-2389.
6. Gingras, A.C. et al. (2001) *Genes Dev.* 15, 807-826.
7. van Gorp, A.G. et al. (2009) *Oncogene* 28, 95-106.
8. Raught, B. et al. (2004) *EMBO J.* 23, 1761-1769.

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

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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Limited Uses

force or effect.

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