

#3595 Store at -20C

## eIF2B-ε Antibody



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TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	85	Rabbit	#Q13144	8893

### Product Usage Information

#### Application

Western Blotting

#### Dilution

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

eIF2B-epsilon Antibody detects endogenous levels of total eIF2B-epsilon protein.

### Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids near the middle of human eIF2B-epsilon. Antibodies are purified by protein A and peptide affinity chromatography.

### Background

Phosphorylation of the eukaryotic initiation factor 2 (eIF2) α subunit is a well-documented mechanism to downregulate protein synthesis under a variety of stress conditions. eIF2 binds GTP and Met-tRNA<sup>i</sup> and transfers Met-tRNA to the 40S subunit to form the 43S preinitiation complex (1,2). eIF2 promotes a new round of translation initiation by exchanging GDP for GTP, a reaction catalyzed by eIF2B (1,2). Kinases that are activated by viral infection (PKR), endoplasmic reticulum stress (PERK/PEK), amino acid deprivation (GCN2), or heme deficiency (HRI) can phosphorylate the α subunit of eIF2 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex and inhibits the turnover of eIF2B. Induction of PKR by IFN-γ and TNF-α induces potent phosphorylation of eIF2α at Ser51 (5,6). eIF2B, a guanine nucleotide exchange factor, is composed of 5 subunits, the largest of which is eIF2B-epsilon (7). Multiple in vivo phosphorylation sites have been identified on eIF2B-epsilon (8). Casein Kinase II can phosphorylate eIF2B-epsilon at Ser717/718 to allow for association with its substrate eIF2. Phosphorylation at Ser544 allows GSK-3 to phosphorylate the key regulatory site Ser540. A fifth eIF2B-epsilon phosphorylation site, Ser466, can be phosphorylated by casein kinase I.

### Background References

1. Kimball, S.R. (1999) *Int. J. Biochem. Cell Biol.* 31, 25-29.
2. de Haro, C. et al. (1996) *FASEB J.* 10, 1378-87.
3. Kaufman, R.J. (1999) *Genes Dev.* 13, 1211-33.
4. Sheikh, M.S. and Fornace Jr., A.J. (1999) *Oncogene* 18, 6121-8.
5. Cheshire, J.L. et al. (1999) *J. Biol. Chem.* 274, 4801-6.
6. Zamanian-Daryoush, M. et al. (2000) *Mol. Cell. Biol.* 20, 1278-90.
7. Fabian, J. R. et al. (1997) *J. Biol. Chem.* 272, 12359-12365.
8. Wang, X. et al. (2001) *EMBO J.* 20, 4349-4359.

### 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

### 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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