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#5324

## eIF2α (D7D3) XP<sup>®</sup> Rabbit mAb

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

<b>Applications:</b> W, W-S, IP, IHC-P	<b>Reactivity:</b> H M R Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 38	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P05198	<b>Entrez-Gene Id:</b> 1965
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### Product Usage Information

#### Application

Western Blotting  
Simple Western™  
Immunoprecipitation  
Immunohistochemistry (Paraffin)

#### Dilution

1:1000  
1:50 - 1:250  
1:50  
1:800 - 1:3200

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #62928.

### Specificity/Sensitivity

eIF2α (D7D3) XP<sup>®</sup> Rabbit mAb detects endogenous levels of total eIF2α protein.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a purified recombinant protein fragment representing sequence in the central region of human eIF2α.

### 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).

### 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.

### 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 **W-S:** Simple Western™ **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

### Cross-Reactivity Key

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

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