

#9721 Store at -20°C

Phospho-eIF2 α (Ser51) Antibody

- Small 100 μ l (10 western blots)
- Large 300 μ l (30 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, Dm	38 kDa	Rabbit**

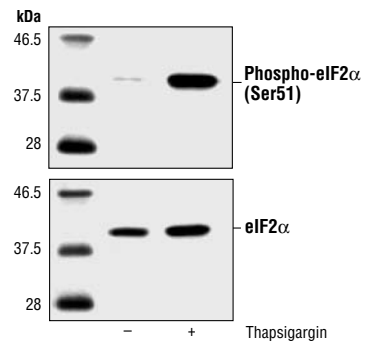
Background: Phosphorylation of the eukaryotic initiation factor 2 (eIF2) α subunit is a well-documented mechanism to downregulate protein synthesis under a variety of stress conditions. Eukaryotic initiation factor 2 binds GTP and Met-tRNAⁱ and transfers Met-tRNA to the 40S subunit to form the 43S preinitiation 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 eIF2 α at Ser51 (5,6).

Specificity/Sensitivity: Phospho-eIF2alpha (Ser51) Antibody detects endogenous eIF2alpha only when phosphorylated at Ser51. The antibody does not recognize eIF2alpha phosphorylated at other sites.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser51 of human eIF2alpha. Antibodies are purified by protein A and peptide affinity chromatography.

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, 1378-1387.
- (3) Kaufman, R.J. (1999) *Genes Dev.* 13, 1211-1233.
- (4) Sheikh, M.S. and Fornace Jr., A.J. (1999) *Oncogene* 18, 6121-6128.
- (5) Cheshire, J.L. et al. (1999) *J. Biol. Chem.* 274, 4801-4806.
- (6) Zamanian-Daryoush, M. et al. (2000) *Mol. Cell. Biol.* 20, 1278-1290.



Western blot analysis of extracts from PC12 cells, untreated or thapsigargin-treated (300 nM), using Phospho-eIF2 α (Ser51) Antibody (upper) or eIF2 α Antibody #9722 (lower).

Entrez-Gene ID #1965
Swiss-Prot Acc. #P05198

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

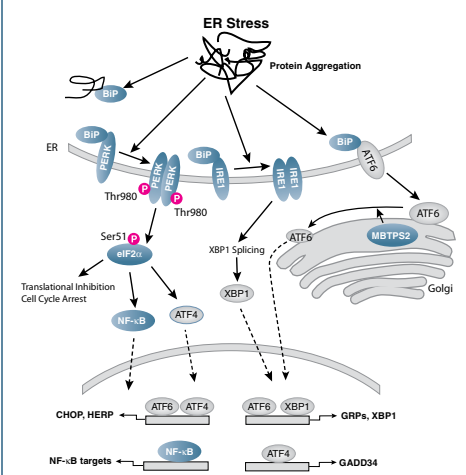
*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:
 Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignaling.com.

Please visit www.cellsignaling.com for a complete listing of recommended companion products.



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

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey 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 All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.