

Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb

- 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.	Isotype
W, IP, IHC-P Endogenous	H, M, R, Mk, Dm	38 kDa	Rabbit IgG**

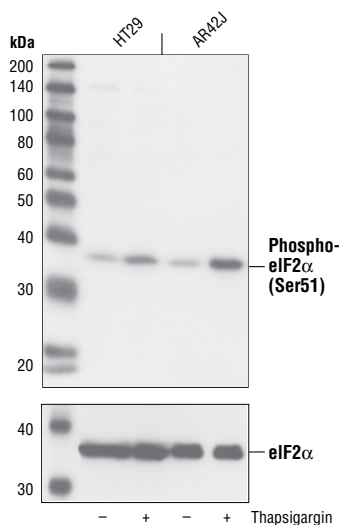
Background: Phosphorylation of the alpha subunit of eukaryotic initiation factor 2 is a well documented mechanism of downregulating protein synthesis under a variety of stress conditions. Eukaryotic initiation factor 2 binds GTP and Met-tRNAi and transfers Met-tRNA to the 40S subunit to form the 43S preinitiation complex (1,2). For eIF2 to promote a new round of translation initiation, GDP must be exchanged for GTP, a reaction catalyzed by eIF2B (1,2). Kinases activated by viral infection (PKR), endoplasmic reticulum stress (PERK/PEK), amino acid deprivation (GCN2) and hemin deficiency (HRI) can phosphorylate the α subunit of eIF2 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex, inhibiting the turnover of eIF2B. Induction of PKR by IFN- γ and TNF- α , or stress provoked by depletion of endoplasmic reticulum calcium levels, induces potent phosphorylation of eIF2 α at Ser51 (5,6).

Specificity/Sensitivity: Phospho-eIF2 α (Ser51) RmAb detects endogenous eIF2 α only when phosphorylated at Ser51. The antibody does not recognize eIF2 α phosphorylated at other sites.

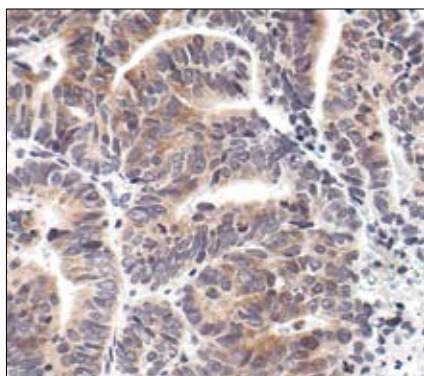
Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser51 of human eIF2 α .

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 HT29 (human) and AR42J (mouse) cells, untreated or thapsigargin-treated (300 nM, 30 min), using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb (upper) or eIF2 α Antibody #9722 (lower).



Immunohistochemical analysis of paraffin-embedded human lung carcinoma using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb.

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.

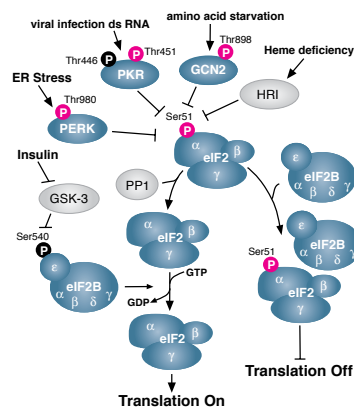
**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

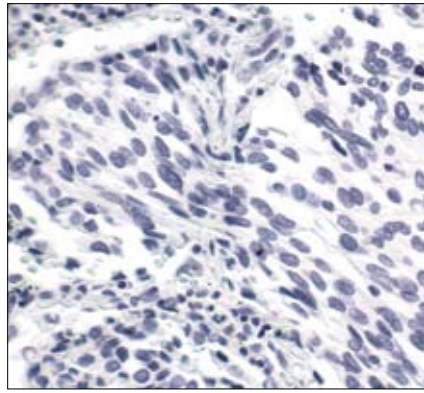
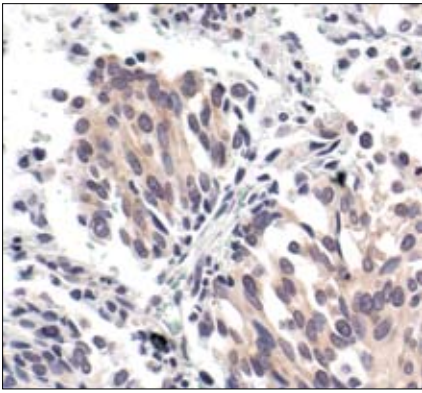
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:50
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112

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

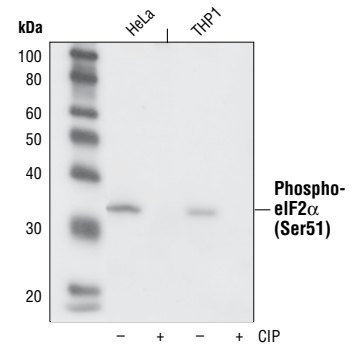
Please visit www.cellsignal.com for a complete listing of recommended companion products.



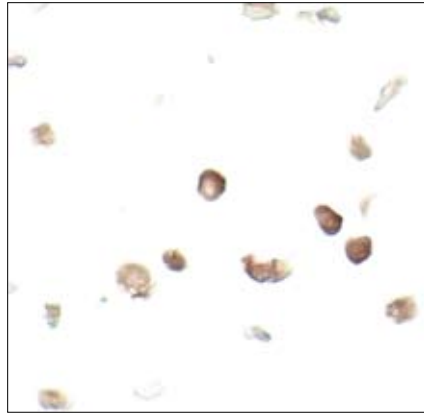
IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.



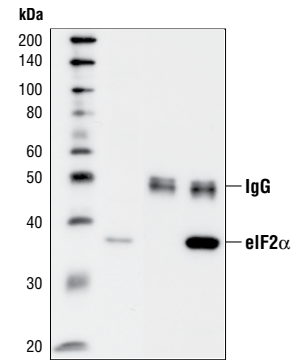
Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb in the presence of control peptide (left) or Phospho-eIF2 α (Ser51) Blocking Peptide (#1221) (right).



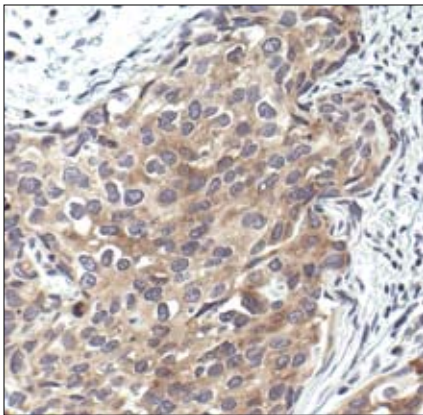
Western blot analysis of extracts from HeLa and THP-1 cells untreated or phosphatase treated, using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded PC-3 cells untreated (left) or thapsigargin-treated (right), using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb.



Western blot analysis of immunoprecipitates from PC12 cells, using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb. Lane 1 is lysate control, lane 2 is the antibody alone as negative control and lane 3 is antibody immunocomplex of PC12 cells.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma, showing cytoplasmic localization, using Phospho-eIF2 α (Ser51) (119A11) Rabbit mAb.