


#9721 Store at -20C

## Phospho-eIF2 $\alpha$ (Ser51) Antibody



**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, W-S	H M R Mk Dm	Endogenous	38	Rabbit	#P05198	1965

<b>Product Usage Information</b>	<b>Application</b> Western Blotting Simple Western™	<b>Dilution</b> 1:1000 1:10 - 1:50
<b>Storage</b>	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.	
<b>Specificity / Sensitivity</b>	Phospho-eIF2 $\alpha$ (Ser51) Antibody detects endogenous eIF2 $\alpha$ only when phosphorylated at Ser51. The antibody does not recognize eIF2 $\alpha$ phosphorylated at other sites. Human eIF2 $\alpha$ residue Ser52 historically has been referenced as Ser51.	
<b>Source / Purification</b>	Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser51 of human eIF2 $\alpha$ . Antibodies are purified by protein A and peptide affinity chromatography.	
<b>Background</b>	Phosphorylation of the eukaryotic initiation factor 2 (eIF2) $\alpha$ 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 $\alpha$ subunit of eIF2 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex and inhibits the turnover of eIF2B. Induction of PKR by IFN- $\gamma$ and TNF- $\alpha$ induces potent phosphorylation of eIF2 $\alpha$ at Ser51 (5,6).	
<b>Background References</b>	1. Kimball, S.R. (1999) <i>Int. J. Biochem. Cell Biol.</i> 31, 25-29. 2. de Haro, C. et al. (1996) <i>FASEB J.</i> 10, 1378-87. 3. Kaufman, R.J. (1999) <i>Genes Dev.</i> 13, 1211-33. 4. Sheikh, M.S. and Fornace Jr., A.J. (1999) <i>Oncogene</i> 18, 6121-8. 5. Cheshire, J.L. et al. (1999) <i>J. Biol. Chem.</i> 274, 4801-6. 6. Zamanian-Daryoush, M. et al. (2000) <i>Mol. Cell. Biol.</i> 20, 1278-90.	

<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
<b>Western Blot Buffer</b>	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.
<b>Applications Key</b>	<b>WB:</b> Western Blotting <b>W-S:</b> Simple Western™
<b>Cross-Reactivity Key</b>	<b>H:</b> human <b>M:</b> mouse <b>R:</b> rat <b>Hm:</b> hamster <b>Mk:</b> monkey <b>Vir:</b> virus <b>Mi:</b> mink <b>C:</b> chicken <b>Dm:</b> D. melanogaster <b>X:</b> Xenopus <b>Z:</b> zebrafish <b>B:</b> bovine <b>Dg:</b> dog <b>Pg:</b> pig <b>Sc:</b> S. cerevisiae <b>Ce:</b> C. elegans <b>Hr:</b> horse <b>GP:</b> Guinea Pig <b>Rab:</b> rabbit <b>All:</b> all species expected
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