

# Phospho-GCN2 (Thr898) Antibody

✓ 100 µl  
(10 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.

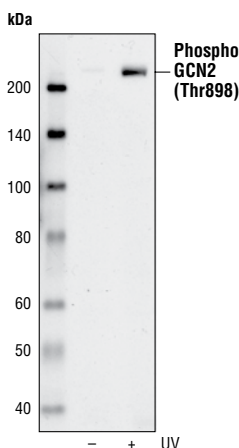
Entrez-Gene ID #440275  
Swiss-Prot Acc. #Q9P2K8

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	220 kDa	Rabbit**

**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. Kinases activated by viral infection (PKR), endoplasmic reticulum stress (PERK/PEK), amino acid deprivation (GCN2) and hemin deficiency (HRI) can phosphorylate the  $\alpha$  subunit of eIF2 (1,2). GCN2 is also required for UV-light induced translation inhibition, and *in vivo* phosphorylation of murine GCN2 at Thr898 is induced by both UV irradiation and by leucine deprivation (3). UV-induced activation of NF- $\kappa$ B also requires GCN2, which may act simply by preventing translation of I $\kappa$ B- $\alpha$  to replace pools that have been ubiquitinated and degraded (4). Interestingly, proteasome inhibitors (MG132 and ALLN) activate the GCN2/eIF2 $\alpha$  pathway, suggesting a pivotal role for this kinase in stress response and ubiquitin-mediated signaling (5). *In vitro* autophosphorylation of yeast GCN2 within its activation loop at Thr882 and Thr887 (Thr898 and Thr903 in mouse) has also been reported (6).

**Specificity/Sensitivity:** Phospho-GCN2 (Thr898) Antibody detects endogenous levels of GCN2 only when phosphorylated at threonine 898.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr898 of murine GCN2. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from SV-T2 cells, untreated or UV-treated (50 mJ/cm<sup>2</sup>, 30 min), using Phospho-GCN2 (Thr898) Antibody.

**Background References:**

- (1) Kaufman, R.J. (1999) *Genes Dev.* 13, 1211–1233.
- (2) Sheikh, M.S. and Fornace, A.J. (1999) *Oncogene* 18, 6121–6128.
- (3) Deng, J. et al. (2002) *Curr. Biol.* 12, 1279–1286.
- (4) Jiang, H.Y. and Wek, R.C. (2005) *Biochem. J.* 385, 371–380.
- (5) Jiang, H.Y. and Wek, R.C. (2005) *J. Biol. Chem.* (in press)
- (6) Garcia-Barrio, M. et al. (2002) *J. Biol. Chem.* 277, 30675–30683.

**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.

\*Species cross-reactivity is determined by western blot.

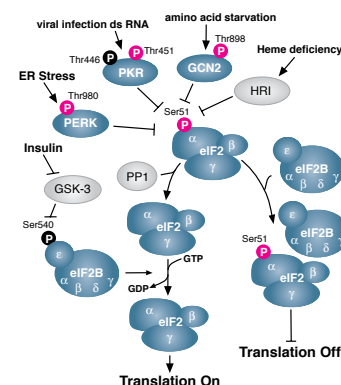
\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western Blotting 1:1000

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.



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

**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.