

GCN2 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, IP Endogenous	H, M, R, Mk	220 kDa	Rabbit**

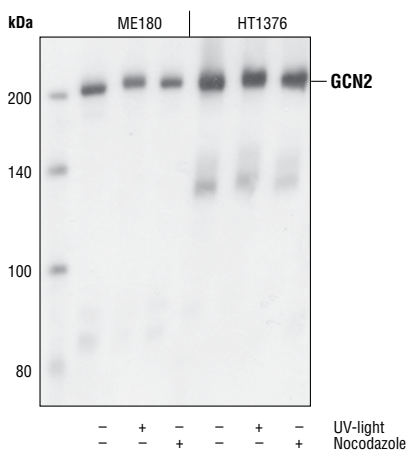
Background: Phosphorylation of the α subunit of eukaryotic initiation factor 2 is a well documented mechanism of downregulating protein synthesis under a variety of stress conditions. Kinases activated by viral infection (PKR), endoplasmic reticulum stress (PERK/PEK), amino acid deprivation (GCN2) and heme deficiency (HRI) can phosphorylate the α 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- κ B also requires GCN2, which may act simply by preventing translation of I κ B- α to replace pools that have been ubiquitinated and degraded (4). Interestingly, proteasome inhibitors (MG132 and ALLN) activate the GCN2/eIF2 α 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: GCN2 Antibody detects endogenous levels of GCN2 protein independent of phosphorylation.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to sequence near the amino terminus of human GCN2. Antibodies are purified by protein A and peptide affinity chromatography.

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.



Western blot analysis of extracts from ME180 and HT1376 cells that were untreated, treated with UV light (50 mJ/cm², 30 minutes), or subjected to nocodazole block (50 ng/ml, 24 hrs), using GCN2 Antibody.

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.

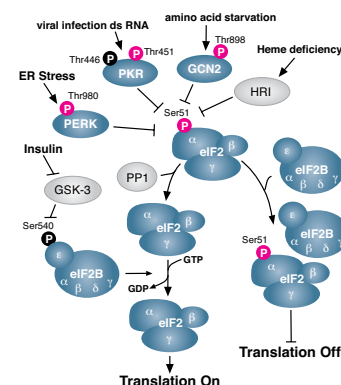
**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunoprecipitation	1:50

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% 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.