Revision 4

Store at -20C

#65981

GCN2 (E7G7E) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H	Endogenous	220	Rabbit IgG	#Q9P2K8	440275

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:6400 - 1:12800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

For a carrier free (BSA and azide free) version of this product see product #96377.

Specificity/Sensitivity

GCN2 (E7G7E) Rabbit mAb recognizes endogenous levels of total GCN2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human GCN2 protein.

Background

Phosphorylation of the eukaryotic initiation factor 2 (eIF2) alpha subunit 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 eIF2 alpha subunit (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-κB also requires GCN2, which may act simply by preventing translation of IκB-alpha to replace pools that have been ubiquitinated and degraded (4). Interestingly, proteasome inhibitors (MG132 and ALLN) activate the GCN2/eIF2alpha 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).

Background References

1. Kaufman, R.J. (1999) *Genes Dev* 13, 1211-33.
2. Sheikh, M.S. and Fornace, A.J. (1999) *Oncogene* 18, 6121-8.
3. Deng, J. et al. (2002) *Curr Biol* 12, 1279-86.
4. Jiang, H.Y. and Wek, R.C. (2005) *Biochem J* 385, 371-80.
5. Jiang, H.Y. and Wek, R.C. (2005) *J Biol Chem* 280, 14189-202.
6. Garcia-Barrio, M. et al. (2002) *J Biol Chem* 277, 30675-83.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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Limited Uses

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