Store at -20°C

#26168

PhosphoPlus® GCN2 (Thr899) Antibody Duet

Cell Signaling TECHNOLOGY®

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Entrez-Gene ID #440275
UniProt ID #Q9P2K8

New 12/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-GCN2 (Thr899) (E1V9M) Rabbit mAb	94668	100 µl	220 kDa	Rabbit IgG
GCN2 (E7G7E) Rabbit mAb	65981	100 µl	220 kDa	Rabbit IgG

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions, and additional application protocols.

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

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-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).

Specificity/Sensitivity: GCN2 (E7G7E) Rabbit mAb recognizes endogenous levels of total GCN2 protein. Phospho-GCN2 (Thr899) (E1V9M) Rabbit mAb recognizes endogenous levels of GCN2 protein only when phosphorylated at Thr899.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human GCN2 protein and a synthetic phosphopeptide corresponding to residues surrounding Thr899 of human GCN2 protein.

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 product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

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.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **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.