

Store at
-20°C

#89117

PhosphoPlus® eIF2 α (Ser51) Antibody Duet



Cell Signaling
TECHNOLOGY®

Support: +1-978-867-2388 (U.S.)
www.cellsignal.com/support

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Entrez-Gene ID #1965
UniProt ID #P05198

New 04/21

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

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-eIF2 α (Ser51) (D9G8) XP® Rabbit mAb	3398	100 μ l	38 kDa	Rabbit IgG
eIF2 α (D7D3) XP® Rabbit mAb	5324	100 μ l	38 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 eukaryotic initiation factor 2 (eIF2) α subunit is a well-documented mechanism to downregulate protein synthesis under a variety of stress conditions. eIF2 binds GTP and Met-tRNAi 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 α subunit of eIF2 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex and inhibits the turnover of eIF2B. Induction of PKR by IFN- γ and TNF- α induces potent phosphorylation of eIF2 α at Ser51 (5,6).

Specificity/Sensitivity: Phospho-eIF2 α (Ser51) (D9G8) XP® Rabbit mAb detects endogenous levels of eIF2 α protein only when phosphorylated at Ser51. The antibody does not recognize eIF2 α phosphorylated at other sites. eIF2 α (D7D3) XP® Rabbit mAb detects endogenous levels of total eIF2 α protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser51 of human eIF2 α protein, or with a purified recombinant protein fragment representing sequence in the central region of human eIF2 α protein.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibodies.

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) Kimball, S.R. (1999) *Int. J. Biochem. Cell Biol.* 31, 25-29.
- (2) de Haro, C. et al. (1996) *FASEB J.* 10, 1378-87.
- (3) Kaufman, R.J. (1999) *Genes Dev.* 13, 1211-33.
- (4) Sheikh, M.S. and Fornace Jr., A.J. (1999) *Oncogene* 18, 6121-8.
- (5) Cheshire, J.L. et al. (1999) *J. Biol. Chem.* 274, 4801-6.
- (6) Zamanian-Daryoush, M. et al. (2000) *Mol. Cell. Biol.* 20, 1278-90.

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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.**