#5199 Store at -20C

Phospho-eIF2α (Ser51) (D9G8) XP® Rabbit mAb (Biotinylated)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk Dm	Endogenous	38	Rabbit IgG	#P05198	1965

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. Store at –20°C. Do not aliquot the antibodies.

Specificity / Sensitivity

Phospho-eIF2α (Ser51) (D9G8) XP® Rabbit mAb (Biotinylated) detects endogenous eIF2α protein only when phosphorylated at Ser51. This antibody does not recognize eIF2α phosphorylated at other sites. Human eIF2alpha residue Ser52 historically has been referenced as Ser51.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser51 of human eIF2α protein.

Product Description

This Cell Signaling Technology antibody is conjugated to biotin under optimal conditions. The biotinylated antibody is expected to exhibit the same species cross-reactivity as unconjugated Phospho-eIF2α (Ser51) (D9G8) XP® Rabbit mAb #3398.

MW (kDa)	38

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 eIF2α at Ser51 (5,6).

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.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses