

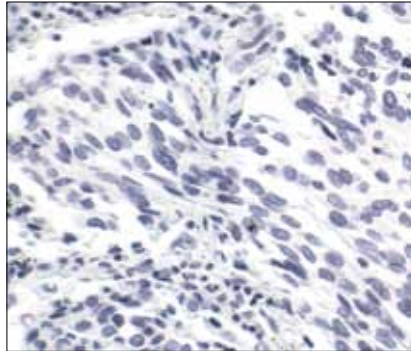
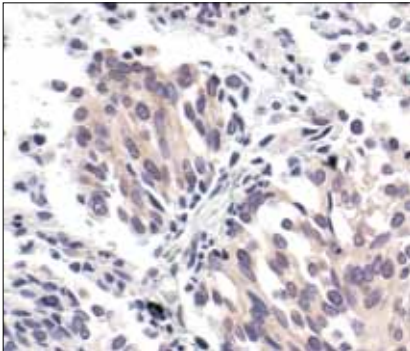
# Phospho-eIF2 $\alpha$ (Ser51) Blocking Peptide

✓ 100  $\mu$ g  
(100 sections)

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**Web** ■ www.cellsignal.com

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Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using Phospho-eIF2 $\alpha$  (Ser51) (119A11) Rabbit mAb (#3597) in the presence of control peptide (left) or Phospho-eIF2 $\alpha$  (Ser51) Blocking Peptide (right).

**Background:** Phosphorylation of the eukaryotic initiation factor 2 (eIF2)  $\alpha$  subunit is a well-documented mechanism to downregulate protein synthesis under a variety of stress conditions. Eukaryotic initiation factor 2 binds GTP and Met-tRNA<sub>i</sub> 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  $\alpha$  subunit of eIF2 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex and inhibits the turnover of eIF2B. Induction of PKR by IFN- $\gamma$  and TNF- $\alpha$  induces potent phosphorylation of eIF2 $\alpha$  at Ser51 (5,6).

**Description:** This peptide is used to block Phospho-eIF2 $\alpha$  (Ser51) (119A11) Rabbit mAb (#3597) and Phospho-eIF2 $\alpha$  (Ser51) (D9G8) XP™ Rabbit mAb (#3398).

**Quality Control:** The quality of the peptide was evaluated by reverse-phase HPLC and by mass spectrometry. The peptide blocks Phospho-eIF2 $\alpha$  (Ser51) (119A11) Rabbit mAb #3597 signal in both immunohistochemistry and western blotting.

**Directions for Use:** For immunohistochemistry, add twice the volume of peptide as volume of antibody used in 100  $\mu$ l total volume. Incubate for a minimum of 30 minutes prior to adding the entire volume to the slide. For western blotting, add an equal volume of peptide as volume of antibody used in 10 ml total volume, and incubate at room temperature for 30 minutes before allowing to react with the blot. Recommended antibody dilution can be found on the Phospho-eIF2 $\alpha$  (Ser51) (119A11) Rabbit mAb #3597 data sheet.

**Applications:** Use as a blocking reagent to evaluate the specificity of antibody reactivity in western blotting and immunohistochemistry protocols.

**Storage:** Supplied in 20 mM potassium phosphate (pH 7.0), 50 mM NaCl, 0.1 mM EDTA, 1 mg/ml BSA and 5% glycerol. Store at -20°C.

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**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, 1378–1387.
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- (4) Sheikh, M.S. and Fornace Jr., A.J. (1999) *Oncogene* 18, 6121–6128.
- (5) Cheshire, J.L. et al. (1999) *J. Biol. Chem.* 274, 4801–4806.
- (6) Zamanian-Daryoush, M. et al. (2000) *Mol. Cell. Biol.* 20, 1278–1290.