Background: Phosphorylation of the α subunit of eukaryotic initiation factor 2 is a well documented mechanism of downregulating protein synthesis under a variety of stress conditions. Eukaryotic initiation factor 2 binds GTP and Met-tRNAi and transfers Met-tRNA to the 40S subunit to form the 43S preinitiation complex (1,2). For eIF2 to promote a new round of translation initiation, GDP must be exchanged for GTP, a reaction catalyzed by eIF2B (1,2). 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 (3,4). This phosphorylation stabilizes the eIF2-GDP-eIF2B complex, inhibiting the turnover of eIF2B. Induction of PKR by IFN-γ and TNF-α, or stress provoked by depletion of endoplasmic reticulum calcium levels, induces potent phosphorylation of eIF2α at Ser51 (5,6).

Specificity/Sensitivity: eIF2α detects endogenous levels of total eIF2α protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy-terminal sequence of eIF2α. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at −20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:
Western Blotting 1:1000
For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.