

## BACKGROUND

Ribosomal protein synthesis is one of the oldest and best-conserved processes taking place in a living cell. Amino acid residues are added to the growing peptide chain in the ribosome by an elongation process that involves two GTP-switched elongation factors, denominated EF1 and EF2 in eukaryotes. EF1-GTP brings the aminoacyl-tRNA (as the so-called ternary complex) to the acceptor site on the ribosome. After the nascent protein chain is transpeptidated to the newly arrived tRNA, EF2 catalyzes a conformational switch of the organelle, such that the newly generated peptidyl-tRNA is moved from the acceptor site to the peptidyl site, liberating the former for a new round of elongation. EF2 is a large (more than 800-residue), probably multifunctional, and remarkable protein that apparently binds to the same ribosomal structures as the EF1-GTP-aminoacyl-tRNA complex.

eEF2 (eukaryotic translation elongation factor 2) is a member of the GTP-binding translation elongation factor family. This protein is an essential factor for protein synthesis. It promotes the GTP-dependent translocation of the nascent protein chain from the A-site to the P-site of the ribosome. eEF2 is phosphorylated and inhibited by a calcium/calmodulin-dependent protein kinase called eEF2 kinase, which modifies Thr56 and Thr58. Phosphorylation at Thr56 and Thr58 results in the inactivation of eEF2 by causing a structural alteration that reduces its affinity for the ribosome, thereby preventing its ability to catalyze translocation.<sup>1</sup> eEF2 kinase is also subjected to regulation by phosphorylation, and a number of phosphorylation sites have been identified that lead to subsequent activation or inhibition of activity.<sup>2,3</sup>

### References:

1. Redpath, N.T. et al: Eur. J. Biochem. 213:689-99, 1993
2. Knebel, A. et al: EMBO J. 20:4360-9, 2001
3. Rose, A.J. et al: J. Physiol. 587:1547-63, 2009

## TECHNICAL INFORMATION

### Source:

eEF2 Antibody is a mouse monoclonal antibody raised against purified recombinant fragments of human eEF2 expressed in *E. Coli*.

### Specificity and Sensitivity:

This antibody detects eEF2 proteins without cross-reactivity with other family members.

**Storage Buffer:** PBS and 30% glycerol

### Storage:

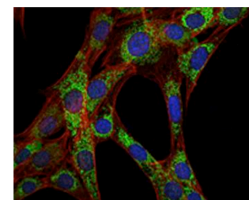
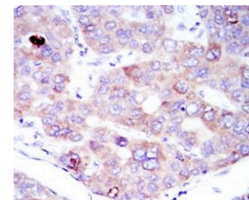
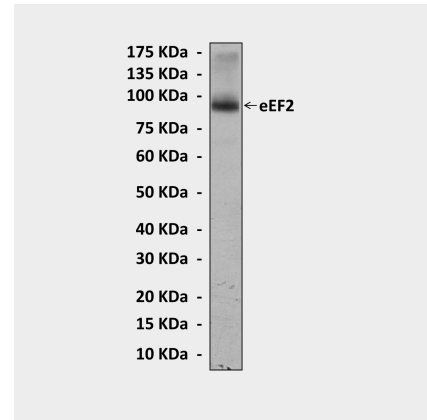
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50-200
ICC	1:50-200
FACS	n/d

\*Optimal dilutions must be determined by end user.

## QUALITY CONTROL DATA



**Top:** Western Blot detection of eEF2 proteins in HepG2 cell lysate using eEF2 Antibody. **Middle:** This antibody stains paraffin-embedded human hepatoma tissue in immunohistochemical analysis. **Bottom:** It also stains 3T3-L1 cells in confocal immunofluorescent studies (eEF2 Antibody: Green; Actin filaments: Red; DRAQ5 DNA Dye: Blue).

