

eEF2K (C-12): sc-390710



The Power to Question

BACKGROUND

The activity of the purified eukaryotic elongation-factor-2 kinase (eEF2K) is completely dependent on calcium and calmodulin, and autophosphorylation on serine and threonine residues is calcium/calmodulin-dependent. eEF2K is a ubiquitous protein kinase that phosphorylates and inactivates eEF2, and thus can modulate the rate of polypeptide chain elongation during translation. eEF2K is detected in skeletal muscle extracts and is phosphorylated rapidly by SAPK4, but poorly by p38, p38 γ , JNK or ERK 2. SAPK4 phosphorylates eEF2K at Ser 359 and Ser 396 *in vitro*, causing its inactivation. The phosphorylation of eEF2K at Ser 359 is also induced by Insulin-like growth factor-1. Ser 359 is in close proximity to Ser 366 and the Ser 366 residue also becomes phosphorylated in response to growth factors. eEF2K is phosphorylated by p70 S6 kinase at Ser 366 and this results in the inactivation of eEF2K, especially at low (micromolar) calcium concentrations.

CHROMOSOMAL LOCATION

Genetic locus: EEF2K (human) mapping to 16p12.2; Eef2k (mouse) mapping to 7 F2.

SOURCE

eEF2K (C-12) is a mouse monoclonal antibody raised against amino acids 426-725 mapping at the C-terminus of eEF2K of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eEF2K (C-12) is available conjugated to agarose (sc-390710 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390710 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390710 PE), fluorescein (sc-390710 FITC), Alexa Fluor[®] 488 (sc-390710 AF488), Alexa Fluor[®] 546 (sc-390710 AF546), Alexa Fluor[®] 594 (sc-390710 AF594) or Alexa Fluor[®] 647 (sc-390710 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390710 AF680) or Alexa Fluor[®] 790 (sc-390710 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

eEF2K (C-12) is recommended for detection of eEF2K of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for eEF2K siRNA (h): sc-39011, eEF2K siRNA (m): sc-39012, eEF2K shRNA Plasmid (h): sc-39011-SH, eEF2K shRNA Plasmid (m): sc-39012-SH, eEF2K shRNA (h) Lentiviral Particles: sc-39011-V and eEF2K shRNA (m) Lentiviral Particles: sc-39012-V.

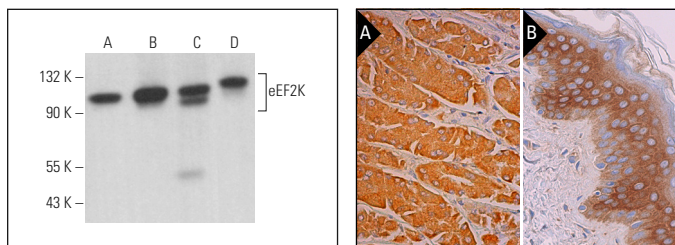
Molecular Weight of eEF2K: 105 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or C6 whole cell lysate: sc-364373.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



eEF2K (C-12): sc-390710. Western blot analysis of eEF2K expression in HeLa (A), NIH/3T3 (B), C6 (C) and K-562 (D) whole cell lysates.

eEF2K (C-12): sc-390710. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes (B).

SELECT PRODUCT CITATIONS

- Kameshima, S., et al. 2019. Eukaryotic elongation factor 2 (eEF2) kinase/eEF2 plays protective roles against glucose deprivation-induced cell death in H9c2 cardiomyoblasts. *Apoptosis* 24: 359-368.
- Campos, R.K., et al. 2020. Ribosomal stalk proteins RPLP1 and RPLP2 promote biogenesis of flaviviral and cellular multi-pass transmembrane proteins. *Nucleic Acids Res.* 48: 9872-9885.
- Shen, Y., et al. 2021. PQBP1 promotes translational elongation and regulates hippocampal mGluR-LTD by suppressing eEF2 phosphorylation. *Mol. Cell* 81: 1425-1438.e10.
- Stecher, C., et al. 2021. Protein phosphatase 1 regulates human cytomegalovirus protein translation by restraining AMPK signaling. *Front. Microbiol.* 12: 698603.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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