SANTA CRUZ BIOTECHNOLOGY, INC.

p-eEF2K (Ser 359): sc-21644

SANTA CRUZ BIOTECHNOLOGY

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 a protein that is detected in skeletal muscle extracts and is phosphorylated rapidly by SAPK4, but poorly by p38, p38γ, 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.

REFERENCES

1. Redpath, N.T. and Proud, C.G. 1993. Purification and phosphorylation of elongation factor-2 kinase from rabbit reticulocytes. Eur. J. Biochem. 212: 511-520.
2. Pavur, K.S., Petrov, A.N. and Ryazanov, A.G. 2000. Mapping the functional domains of elongation factor-2 kinase. Biochemistry 39: 12216-12224.
3. Knebel, A., Morrice, N. and Cohen, P. 2001. A novel method to identify protein kinase substrates: eEF2 kinase is phosphorylated and inhibited by SAPK4/p38δ. EMBO J. 20: 4360-4369.
4. Wang, X., Li, W., Williams, M., Terada, N., Alessi, D.R. and Proud, C.G. 2001. Regulation of elongation factor 2 kinase by p90Rsk1 and p70S6 kinase. EMBO J. 20: 4370-4379.
5. Proud, C.G., Wang, X., Patel, J.V., Campbell, L.E., Kleijn, M., Li, W. and Browne, G.J. 2001. Interplay between Insulin and nutrients in the regulation of translation factors. Biochem. Soc. Trans. 29: 541-547.

CHROMOSOMAL LOCATION

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

SOURCE

p-eEF2K (Ser 359) is available as either goat (sc-21644) or rabbit (sc-21644-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 359 phosphorylated eEF2K of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21644 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

p-eEF2K (Ser 359) is recommended for detection of Ser 359 phosphorylated eEF2K of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

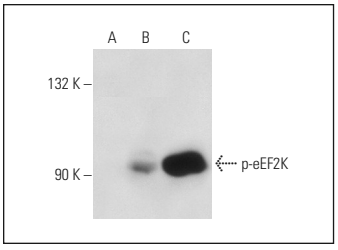
p-eEF2K (Ser 359) is also recommended for detection of correspondingly phosphorylated eEF2K in additional species, including equine and canine.

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 p-eEF2K: 105 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, HeLa whole cell lysate: sc-2200 or eEF2K (h2): 293T Lysate: sc-172554.

DATA



p-eEF2K (Ser 359)-R: sc-21644-R. Western blot analysis of eEF2K phosphorylation in non-transfected 293T: sc-117752 (**A**), human eEF2K transfected 293T: sc-172554 (**B**) and HeLa (**C**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.