SANTA CRUZ BIOTECHNOLOGY, INC.

eEF2K (29): sc-136361

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 an 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, 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 p90(RSK1) and p70 S6 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 (mouse) mapping to 7 F2.

SOURCE

eEF2K (29) is a mouse monoclonal antibody raised against amino acids 397-517 of eEF2K of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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. Not for resale.

APPLICATIONS

eEF2K (29) is recommended for detection of eEF2K of mouse and rat 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

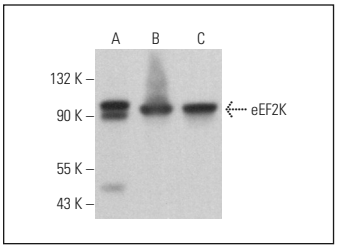
Molecular Weight of eEF2K: 105 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, L6 whole cell lysate: sc-364196 or KNRK whole cell lysate: sc-2214.

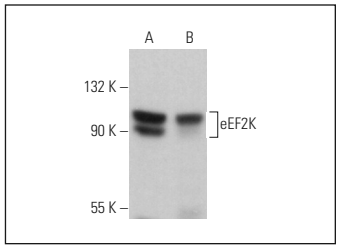
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



eEF2K (29): sc-136361. Western blot analysis of eEF2K expression in C6 (**A**), KNRK (**B**) and F9 (**C**) whole cell lysates.



eEF2K (29): sc-136361. Western blot analysis of eEF2K expression in C6 (**A**) and L6 (**B**) whole cell lysates.

PROTOCOLS

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