

EF-2 (H-8): sc-390014

BACKGROUND

Two elongation factors (EF) EF-Tu and EF-2 participate in the elongation phase during protein biosynthesis on the ribosome and their functional cycles depend on GTP binding and its hydrolysis. EF-Tu (also designated mitochondrial precursor p43) and EF-2 are multidomain GTPases with essential functions in translation, and they both bind to the same site on the ribosome where their low intrinsic GTPase activities are strongly stimulated. EF-Tu plays a central role in the fast and accurate delivery of aminoacyl-tRNAs to the translating ribosome. In addition, EF-Tu protects the aminoester bond against hydrolysis until a correct match between the codon on mRNA and the anticodon on tRNA can be achieved. EF-2 supports the translocation of tRNAs and of mRNAs on the ribosome so that a new codon can be exposed for decoding.

REFERENCES

- Nyborg, J. 1998. Possible evolution of factors involved in protein biosynthesis. *Acta Biochem. Pol.* 45: 883-894.
- Agrawal, R.K., Penczek, P., Grassucci, R.A. and Frank, J. 1998. Visualization of elongation factor G on the *Escherichia coli* 70S ribosome: the mechanism of translocation. *Proc. Natl. Acad. Sci. USA* 95: 6134-6138.
- Kraal, B., Lippmann, C. and Kleenhou, C. 1999. Translational regulation by modifications of the elongation factor Tu. *Folia Microbiol.* 44: 131-141.
- Martemyanov, K.A. and Gudkov, A.T. 2000. Domain III of elongation factor G from *T. thermophilus* is essential for induction of GTP hydrolysis on the ribosome. *J. Biol. Chem.* 275: 35820-35824.
- Rodnina, M.V., Stark, H., Savelsbergh, A., Wieden, H.J., Mohr, D., Matassova, N.B., Peske, F., Daviter, T., Gualerzi, C.O. and Wintermeyer, W. 2000. GTPases mechanisms and functions of translation factors on the ribosome. *Biol. Chem.* 381: 377-387.

CHROMOSOMAL LOCATION

Genetic locus: *EEF2* (human) mapping to 19p13.3; *Eef2* (mouse) mapping to 10 C1.

SOURCE

EF-2 (H-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 811-849 near the C-terminus of EF-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390014 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

EF-2 (H-8) is recommended for detection of EF-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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 EF-2 siRNA (h): sc-43541, EF-2 siRNA (m): sc-43542, EF-2 shRNA Plasmid (h): sc-43541-SH, EF-2 shRNA Plasmid (m): sc-43542-SH, EF-2 shRNA (h) Lentiviral Particles: sc-43541-V and EF-2 shRNA (m) Lentiviral Particles: sc-43542-V.

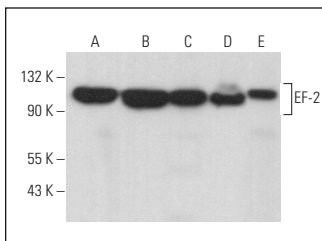
Molecular Weight of EF-2: 93 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, 3T3-L1 cell lysate: sc-2243 or PC-12 cell lysate: sc-2250.

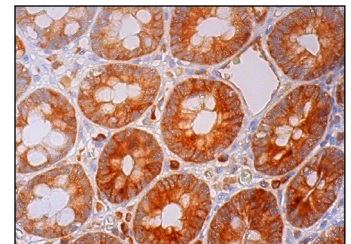
RECOMMENDED SUPPORT REAGENTS

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, 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-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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



EF-2 (H-8): sc-390014. Western blot analysis of EF-2 expression in PC-12 (A), c4 (B), 3T3-L1 (C) and Hep G2 (D) whole cell lysates and rat liver tissue extract (E).



EF-2 (H-8): sc-390014. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells and endothelial cells.

RESEARCH USE

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

PROTOCOLS

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