

EF-1 ϵ 1 (E-4): sc-376019

BACKGROUND

EF-1 (elongation factor-1) is a multi-protein complex that is comprised of α , β , γ and δ subunits, all of which work together to ensure the delivery of aminoacyl-tRNAs to the ribosome, thereby elongating mRNA. EF-1 ϵ 1 (eukaryotic translation elongation factor 1 ϵ -1), also known as multisynthetase complex auxiliary component p18, is a 174 amino acid protein that shares sequence similarity with the amino-terminal ends of the β and γ subunits of EF-1. By specifically interacting with MetRS, EF-1 ϵ 1 binds to a macromolecular tRNA synthetase complex that catalyzes the ligation of specific amino acids to their cognate tRNAs. Upon DNA damage, EF-1 ϵ 1 translocates to the nucleus where it interacts with ATM and ATR, resulting in p53 activation. In mice, loss of EF-1 ϵ 1 results in high susceptibility to spontaneous tumors, strongly suggesting that EF-1 ϵ 1 is a tumor suppressor.

REFERENCES

1. Quevillon, S. and Mirande, M. 1996. The p18 component of the multisynthetase complex shares a protein motif with the β and γ subunits of eukaryotic elongation factor 1. *FEBS Lett.* 395: 63-67.
2. Mao, M., et al. 1998. Identification of genes expressed in human CD34+ hematopoietic stem/progenitor cells by expressed sequence tags and efficient full-length cDNA cloning. *Proc. Natl. Acad. Sci. USA* 95: 8175-8180.
3. Park, B.J., et al. 2005. The haploinsufficient tumor suppressor p18 upregulates p53 via interactions with ATM/ATR. *Cell* 120: 209-221.
4. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609206. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: EEF1E1 (human) mapping to 6p24.3; Eef1e1 (mouse) mapping to 13 A3.3.

SOURCE

EF-1 ϵ 1 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-37 near the N-terminus of EF-1 ϵ 1 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.

EF-1 ϵ 1 (E-4) is available conjugated to agarose (sc-376019 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376019 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376019 PE), fluorescein (sc-376019 FITC), Alexa Fluor® 488 (sc-376019 AF488), Alexa Fluor® 546 (sc-376019 AF546), Alexa Fluor® 594 (sc-376019 AF594) or Alexa Fluor® 647 (sc-376019 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376019 AF680) or Alexa Fluor® 790 (sc-376019 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376019 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

EF-1 ϵ 1 (E-4) is recommended for detection of EF-1 ϵ 1 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).

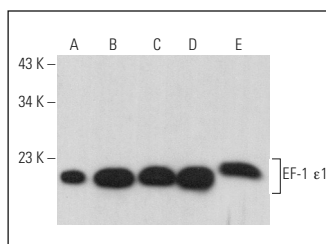
EF-1 ϵ 1 (E-4) is also recommended for detection of EF-1 ϵ 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for EF-1 ϵ 1 siRNA (h): sc-77233, EF-1 ϵ 1 siRNA (m): sc-77234, EF-1 ϵ 1 shRNA Plasmid (h): sc-77233-SH, EF-1 ϵ 1 shRNA Plasmid (m): sc-77234-SH, EF-1 ϵ 1 shRNA (h) Lentiviral Particles: sc-77233-V and EF-1 ϵ 1 shRNA (m) Lentiviral Particles: sc-77234-V.

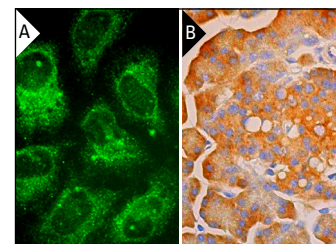
Molecular Weight of EF-1 ϵ 1: 18 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or Jurkat whole cell lysate: sc-2204.

DATA



EF-1 ϵ 1 (E-4): sc-376019. Western blot analysis of EF-1 ϵ 1 expression in HeLa (A), Jurkat (B), Hep G2 (C), HL-60 (D) and KNRK (E) whole cell lysates.



EF-1 ϵ 1 (E-4): sc-376019. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and Islets of Langerhans (B).

SELECT PRODUCT CITATIONS

1. Kim, S.M., et al. 2018. AIMP3 depletion causes genome instability and loss of stemness in mouse embryonic stem cells. *Cell Death Dis.* 9: 972.
2. Schwarz, M.A., et al. 2018. Aminoacyl tRNA synthetase complex interacting multifunctional protein 1 simultaneously binds glutamyl-prolyl-tRNA synthetase and scaffold protein aminoacyl tRNA synthetase complex interacting multifunctional protein 3 of the multi-tRNA synthetase complex. *Int. J. Biochem. Cell Biol.* 99: 197-202.

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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