

EF-Ts (A-10): sc-271588

BACKGROUND

EF-Ts, also known as TSFM (Ts translation elongation factor, mitochondrial) or COXPD3, is a 325 amino acid protein that is one of 13 mitochondrial-encoded proteins that work together during the elongation phase of protein biosynthesis on the ribosome. Expressed ubiquitously with highest levels present in liver, kidney and skeletal muscle, EF-Ts associates with EF-Tu, a multidomain GTPase with essential functions in translation, and, via this interaction, facilitates the exchange of GDP for GTP, thereby inducing protein elongation. Mutations in the gene encoding EF-Ts are the cause of combined oxidative phosphorylation deficiency type 3 (COXPD3), a condition characterized by defects in the mitochondrial oxidative phosphorylation system and often characterized by severe metabolic acidosis with encephalomyopathy or with hypertrophic cardiomyopathy. Multiple isoforms of EF-Ts exist due to alternative splicing events.

REFERENCES

1. Xin, H., et al. 1995. Cloning and expression of mitochondrial translational elongation factor Ts from bovine and human liver. *J. Biol. Chem.* 270: 17243-17249.
2. Benkowski, L.A., et al. 1995. Interaction of mitochondrial elongation factors Tu.Ts with aminoacyl-tRNA. *Nucleic Acids Symp. Ser.* 33: 163-166.
3. Vernon, J.L., et al. 2000. Assignment of the mitochondrial translation elongation factor Ts gene (TSFM) to human chromosome 12 bands q13 → q14 by *in situ* hybridization and with somatic cell hybrids. *Cytogenet. Cell Genet.* 89: 145-146.
4. Smeitink, J.A., et al. 2006. Distinct clinical phenotypes associated with a mutation in the mitochondrial translation elongation factor EFTs. *Am. J. Hum. Genet.* 79: 869-877.

CHROMOSOMAL LOCATION

Genetic locus: TSFM (human) mapping to 12q14.1; Tsfm (mouse) mapping to 10 D3.

SOURCE

EF-Ts (A-10) is a mouse monoclonal antibody raised against amino acids 36-325 mapping at the C-terminus of EF-Ts of human origin.

PRODUCT

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

EF-Ts (A-10) is available conjugated to agarose (sc-271588 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271588 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271588 PE), fluorescein (sc-271588 FITC), Alexa Fluor® 488 (sc-271588 AF488), Alexa Fluor® 546 (sc-271588 AF546), Alexa Fluor® 594 (sc-271588 AF594) or Alexa Fluor® 647 (sc-271588 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271588 AF680) or Alexa Fluor® 790 (sc-271588 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

EF-Ts (A-10) is recommended for detection of EF-Ts 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for EF-Ts siRNA (h): sc-77243, EF-Ts siRNA (m): sc-77244, EF-Ts shRNA Plasmid (h): sc-77243-SH, EF-Ts shRNA Plasmid (m): sc-77244-SH, EF-Ts shRNA (h) Lentiviral Particles: sc-77243-V and EF-Ts shRNA (m) Lentiviral Particles: sc-77244-V.

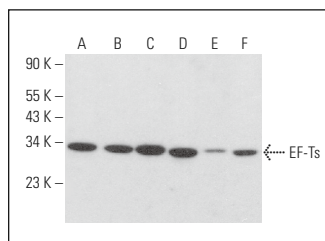
Molecular Weight of EF-Ts: 34 kDa.

Positive Controls: EF-Ts (m): 293T Lysate: sc-119940, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

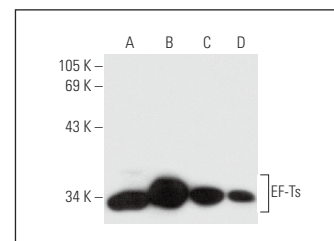
RECOMMENDED SUPPORT REAGENTS

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.

DATA



EF-Ts (A-10): sc-271588. Western blot analysis of EF-Ts expression in HeLa (A), SK-MEL-24 (B), JM1 (C), Neuro-2A (D), ES-2 (E) and F9 (F) whole cell lysates.



EF-Ts (A-10): sc-271588. Western blot analysis of EF-Ts expression in non-transfected 293T: sc-117752 (A), mouse EF-Ts transfected 293T: sc-119940 (B), HeLa (C) and Jurkat (D) whole cell lysates.

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.

PROTOCOLS

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