mtTFA (C-9): sc-376672

BACKGROUND

mtTFA (mitochondrial transcription factor A), also known as mtTFA1, TFAM, TCF6 (for transcription factor 6-like1), TCF6L2 and tSHMG, is a nuclear-encoded gene product that is imported into the mitochondria. mtTFA is required for many aspects of mitochondrial biogenesis including the replication and transcription of mitochondrial DNA (mtDNA). In mouse, testis-specific mtTFA is missing the mitochondria targeting sequence and is present in the nucleus rather than the mitochondria. This form of mtTFA is located primarily in the nuclei of elongated spermatids and may be involved in the regulation of gene expression of the haploid male genome. During mouse and human spermatogenesis there is a reduction of mtTFA protein levels and a reduction in mtDNA copy number. These features may provide one of the mechanisms by which paternal mtDNA transmission is prevented. mtTFA has been associated with mitochondrial disorder in humans characterized by ocular myopathy, exercise intolerance and muscle wasting.

REFERENCES


CHROMOSOMAL LOCATION

Genetic locus: TFAM (human) mapping to 10q21.1

SOURCE

mtTFA (C-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 207-241 near the C-terminus of mtTFA of human origin.

PRODUCT

Each vial contains 200 µg IgG2κ kappa light chain in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

mtTFA (C-9) is available conjugated to agarose (sc-376672 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376672 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-376672 PE), fluorescein (sc-376672 FITC), Alexa Fluor® 488 (sc-376672 AF488) or Alexa Fluor® 647 (sc-376672 AF647), 200 µg/ml, for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-376672 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

mtTFA (C-9) is recommended for detection of mtTFA of 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 mtTFA siRNA (h): sc-38053, mtTFA shRNA Plasmid (h): sc-38053-SH and mtTFA shRNA (h) Lentiviral Particles: sc-38053-V.

Molecular Weight of mtTFA: 25 kDa.

Positive Controls: A-673 cell lysate: sc-2414, Caco-2 cell lysate: sc-2262 or U-698-M whole cell lysate: sc-364799.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG BP-HRP: sc-516102 or m-IgG 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).

DATA

mtTFA (C-9): sc-376672. Western blot analysis of mtTFA expression in PD (A), A-673 (B), Caco-2 (C), K-562 (D) and HL-60 (F) whole cell lysates.

mtTFA (C-9): sc-376672. Immunofluorescence staining of formalin fixed Hep G2 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (B).

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.