

mtTFA (K-18): sc-19050

BACKGROUND

mtTFA (mitochondrial transcription factor A), also known as mtTF1, 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 mice, 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.

CHROMOSOMAL LOCATION

Genetic locus: TFAM (human) mapping to 10q21.1; Tfam (mouse) mapping to 10 B5.3.

SOURCE

mtTFA (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of mtTFA of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-19050 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-19050 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

mtTFA (K-18) is recommended for detection of precursor and mature mtTFA of human and, to a lesser extent, 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)], 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 siRNA (m): sc-45912, mtTFA siRNA (r): sc-156067, mtTFA shRNA Plasmid (h): sc-38053-SH, mtTFA shRNA Plasmid (m): sc-45912-SH, mtTFA shRNA Plasmid (r): sc-156067-SH, mtTFA shRNA (h) Lentiviral Particles: sc-38053-V, mtTFA shRNA (m) Lentiviral Particles: sc-45912-V and mtTFA shRNA (r) Lentiviral Particles: sc-156067-V.

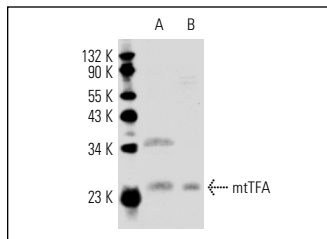
mtTFA (K-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of mtTFA: 25 kDa.

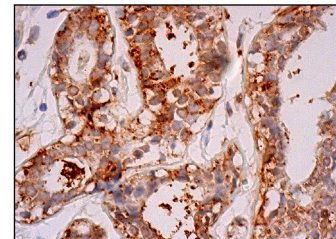
STORAGE

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

DATA



mtTFA (K-18): sc-19050. Western blot analysis of mtTFA expression in A-431 (A) and CCRF-CEM (B) whole cell lysates.



mtTFA (K-18): sc-19050. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Amaral, A., et al. 2007. The expression of polymerase γ and mitochondrial transcription factor A and the regulation of mitochondrial DNA content in mature human sperm. *Hum. Reprod.* 22: 1585-1596.
- Gegg, M.E., et al. 2009. Silencing of PINK1 expression affects mitochondrial DNA and oxidative phosphorylation in dopaminergic cells. *PLoS ONE* 4: e4756.
- Aamann, M.D., et al. 2010. Cockayne syndrome group B protein promotes mitochondrial DNA stability by supporting the DNA repair association with the mitochondrial membrane. *FASEB J.* 24: 2334-2346.
- García-Giménez, J.L., et al. 2011. Differential expression of PGC-1 α and metabolic sensors suggest age-dependent induction of mitochondrial biogenesis in Friedreich ataxia fibroblasts. *PLoS ONE* 6: e20666.
- Martinez-Bello, V.E., et al. 2012. Three weeks of erythropoietin treatment hampers skeletal muscle mitochondrial biogenesis in rats. *J. Physiol. Biochem.* 68: 593-601.
- Lin, C.S., et al. 2012. High mitochondrial DNA copy number and bioenergetic function are associated with tumor invasion of esophageal squamous cell carcinoma cell lines. *Int. J. Mol. Sci.* 13: 11228-11246.
- Sanchis-Gomar, F., et al. 2013. PPAR γ agonist pioglitazone does not enhance performance in mice. *Drug Test. Anal.* E-published.

RESEARCH USE

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


 MONOS
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Try **mtTFA (C-9): sc-376672** or **mtTFA (F-6): sc-166965**, our highly recommended monoclonal alternatives to mtTFA (K-18). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **mtTFA (C-9): sc-376672**.