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TFAM Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP10271b

Product Information

Application	IHC-P, FC, IF, WB, E
Primary Accession	Q00059
Other Accession	NP_003192.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB27631
Calculated MW	29097
Antigen Region	216-246

Additional Information

Gene ID	7019
Other Names	Transcription factor A, mitochondrial, mtTFA, Mitochondrial transcription factor 1, MtTF1, Transcription factor 6, TCF-6, Transcription factor 6-like 2, TFAM, TCF6, TCF6L2
Target/Specificity	This TFAM antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 216-246 amino acids from the C-terminal region of human TFAM.
Dilution	IHC-P~~1:100~500 FC~~1:10~50 IF~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TFAM Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TFAM (HGNC:11741)
Synonyms	TCF6, TCF6L2

Function	Binds to the mitochondrial light strand promoter and functions in mitochondrial transcription regulation (PubMed:29445193, PubMed:32183942). Component of the mitochondrial transcription initiation complex, composed at least of TFB2M, TFAM and POLRMT that is required for basal transcription of mitochondrial DNA (PubMed:29149603). In this complex, TFAM recruits POLRMT to a specific promoter whereas TFB2M induces structural changes in POLRMT to enable promoter opening and trapping of the DNA non-template strand (PubMed:20410300). Required for accurate and efficient promoter recognition by the mitochondrial RNA polymerase (PubMed:22037172). Promotes transcription initiation from the HSP1 and the light strand promoter by binding immediately upstream of transcriptional start sites (PubMed:22037172). Is able to unwind DNA (PubMed:22037172). Bends the mitochondrial light strand promoter DNA into a U-turn shape via its HMG boxes (PubMed:1737790). Required for maintenance of normal levels of mitochondrial DNA (PubMed:19304746, PubMed:22841477). May play a role in organizing and compacting mitochondrial DNA (PubMed:22037171).
Cellular Location	Mitochondrion. Mitochondrion matrix, mitochondrion nucleoid

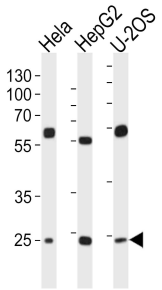
Background

This gene encodes a mitochondrial transcription factor that is a key activator of mitochondrial transcription as well as a participant in mitochondrial genome replication. Studies in mice have demonstrated that this gene product is required to regulate the mitochondrial genome copy number and is essential for embryonic development. A mouse model for Kearns-Sayre syndrome was produced when expression of this gene was eliminated by targeted disruption in heart and muscle cells.

References

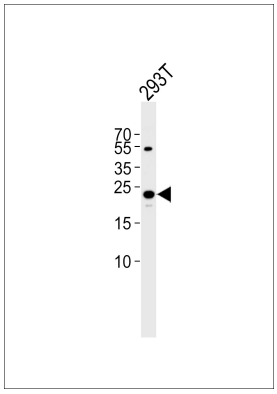
Wang, W., et al. Nucleic Acids Res. (2010) In press :
Corneveaux, J.J., et al. Hum. Mol. Genet. 19(16):3295-3301(2010)
Akhmetov, I.I., et al. Fiziol Cheloveka 36(2):121-125(2010)
Shulman, J.M., et al. PLoS ONE 5 (6), E11244 (2010) :
Laumet, G., et al. J. Alzheimers Dis. 20(4):1181-1188(2010)

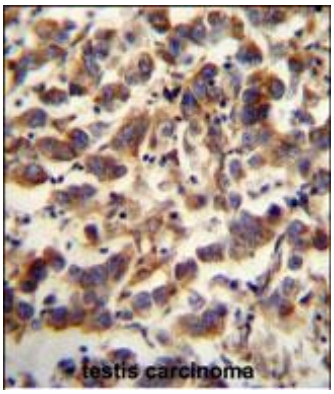
Images



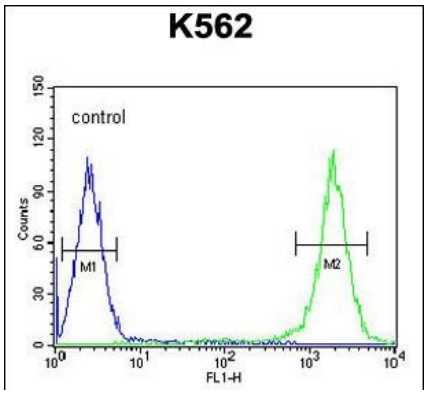
Western blot analysis of lysates from Hela, HepG2, U-2OS cell line (from left to right), using TFAM Antibody (C-term)(Cat. #AP10271b). AP10271b was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysates at 20ug per lane.

Western blot analysis of lysate from 293T cell line, using TFAM Antibody (C-term) (Cat. #AP10271b). AP10271b was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.

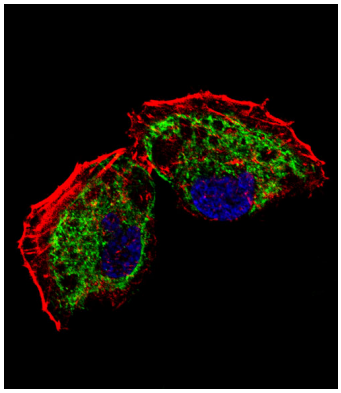




TFAM antibody (C-term) (Cat. #AP10271b) immunohistochemistry analysis in formalin fixed and paraffin embedded human testis carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the TFAM antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

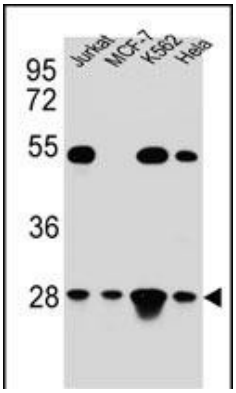


TFAM Antibody (C-term) (Cat. #AP10271b) flow cytometric analysis of K562 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Fluorescent confocal image of NCI-H460 cell stained with TFAM Antibody (C-term)(Cat#AP10271b). NCI-H460 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with TFAM primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min).TFAM immunoreactivity is localized to mitochondrion significantly.

TFAM Antibody (C-term) (Cat. #AP10271b) western blot analysis in Hela,Jurkat,K562,MCF-7 cell line lysates (35ug/lane).This demonstrates the TFAM antibody detected the TFAM protein (arrow).



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