SANTA CRUZ BIOTECHNOLOGY, INC.

TFB2M (2E10): sc-517095

BACKGROUND

TFB2M (transcription factor B2, mitochondrial), also known as NS5ATP5, Hkp1, Mitochondrial 12S rRNA dimethylase 2, Hepatitis C virus NS5A-transactivated protein 5 or mitochondrial Dimethyladenosine transferase 2, is a 396 amino acid mitochondrial protein that belongs to the rRNA adenine N_6-methyltransferase family. Expressed ubiquitously, TFB2M is an S-adenosyl-L-methionine-dependent methyltransferase which specifically dimethylates mitochondrial 12S rRNA at the conserved stem loop. TFB2M is required for basal transcription of mitochondrial DNA and stimulates transcription independently of its methyltransferase activity. Compared to TFB1M, TFB2M has less methyltransferase activity but activates transcription of mitochondrial DNA more efficiently.

REFERENCES

1. Falkenberg, M., et al. 2002. Mitochondrial transcription factors B1 and B2 activate transcription of human mtDNA. Nat. Genet. 31: 289-294.
2. Gleyzer, N., et al. 2005. Control of mitochondrial transcription specificity factors (TFB1M and TFB2M) by nuclear respiratory factors (NRF-1 and NRF-2) and PGC-1 family coactivators. Mol. Cell. Biol. 25: 1354-1366.
3. Dubessay, P., et al. 2007. Aging impact on biochemical activities and gene expression of *Drosophila melanogaster* mitochondria. Biochimie 89: 988-1001.
4. Cotney, J., et al. 2007. Relative abundance of the human mitochondrial transcription system and distinct roles for h-mtTFB1 and h-mtTFB2 in mitochondrial biogenesis and gene expression. Nucleic Acids Res. 35: 4042-4054.

CHROMOSOMAL LOCATION

Genetic locus: TFB2M (human) mapping to 1q44.

SOURCE

TFB2M (2E10) is a mouse monoclonal antibody raised against amino acids 297-396 representing partial length TFB2M of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TFB2M (2E10) is recommended for detection of TFB2M of human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TFB2M siRNA (h): sc-78569, TFB2M shRNA Plasmid (h): sc-78569-SH and TFB2M shRNA (h) Lentiviral Particles: sc-78569-V.

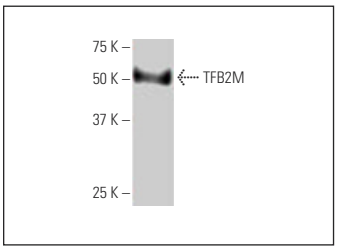
Molecular Weight of TFB2M: 45 kDa.

Positive Controls: human kidney extract: sc-363764 or HeLa whole cell lysate: sc-2200.

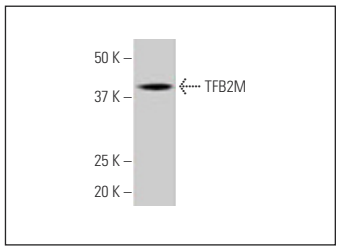
RECOMMENDED SUPPORT REAGENTS

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).

DATA



TFB2M (2E10); sc-517095. Western blot analysis of TFB2M expression in human kidney tissue extract.



TFB2M (2E10); sc-517095. Western blot analysis of TFB2M expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Iershov, A., et al. 2019. The class 3 PI3K coordinates autophagy and mitochondrial lipid catabolism by controlling nuclear receptor PPARα. Nat. Commun. 10: 1566.
2. Bostwick, A.M., et al. 2020. Phosphorylation of mitochondrial transcription factor B2 controls mitochondrial DNA binding and transcription. Biochem. Biophys. Res. Commun. 528: 580-585.
3. Pronsato, L., et al. 2020. Testosterone induces up-regulation of mitochondrial gene expression in murine C2C12 skeletal muscle cells accompanied by an increase of nuclear respiratory factor-1 and its downstream effectors. Mol. Cell. Endocrinol. 500: 110631.
4. Wang, Y., et al. 2021. Biological and epigenetic alterations of mitochondria involved in cellular replicative and hydrogen peroxide-induced premature senescence of human embryonic lung fibroblasts. Ecotoxicol. Environ. Saf. 216: 112204.

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.