abcam

BECKMAN COULTER

ab326181

SNv428 Anti-mTFA antibody [18G102B2E11]

Mouse Monoclonal mTFA antibody - conjugated to SNv428.
Suitable for Flow Cyt(Intra) and reacts with Human samples.

This is a Beckman Coulter product distributed by Abcam

Key facts

Isotype	IgG2b
Host species	Mouse
Conjugation	SNv428
Excitation/Emission	Ex: 405nm, Em: 428nm
Storage buffer	pH: 7.4 Preservative: 0.1% Sodium azide Constituents: PBS, 0.2% BSA, 0.02% Pluronic F-68
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	18G102B2E11
Purification technique	Precipitation Ammonium Sulphate
Light chain type	kappa
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/200
Notes	-

Target data

See full target information TFAM

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	MtTFA also known as mitochondrial transcription factor A or TFAM is an important element in mitochondrial DNA regulation. It plays a pivotal role in maintaining mitochondrial genome integrity and ensuring proper mitochondrial function. This protein weighing approximately 25 kDa is expressed within the mitochondria. It binds to the mitochondrial DNA facilitating the transcription and replication processes ensuring the correct functioning of cellular energy metabolism.
Biological function summary	MtTFA is essential for mitochondrial DNA packaging and transcriptional activation. It acts as a binding factor that organizes the mtDNA into a nucleoid-like structure providing protection and stability. MtTFA functions as part of a larger multi-protein complex that includes mitochondrial RNA polymerase ensuring proper transcription of mitochondrial genes. These activities are critical for normal energy production and mitochondrial biogenesis.
Pathways	The mtTFA protein is integral to the oxidative phosphorylation and mitochondrial biogenesis pathways. It orchestrates the expression of genes critical for these pathways alongside related proteins like NRF2 and PGC-1α. MtTFA ensures effective mitochondrial function by modulating the transcription of key mitochondrial-encoded components necessary for electron transport and ATP synthesis thereby sustaining cellular energy balance.
Associated diseases and disorders	MtTFA dysregulation is associated with mitochondrial diseases and neurodegenerative disorders. Abnormal mtTFA activity disrupts mitochondrial DNA maintenance potentially leading to conditions like mitochondrial myopathy. It is also linked with proteins such as POLG which are involved in mitochondrial DNA replication. Understanding mtTFA's role in these pathologies highlights its importance as a target in therapeutic strategies aimed at restoring mitochondrial function and preventing disease progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

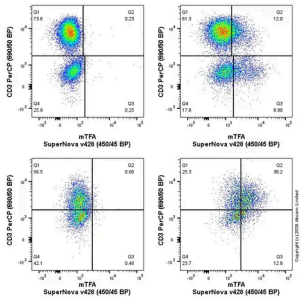
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1 product image



Flow Cytometry (Intracellular) - SNv428 Anti-mTFA antibody [18G102B2E11] (ab326181)

MTFA Flow Cytometry (Intracellular) staining of Human peripheral mononuclear cells (PBMCs) using mouse Anti-mTFA antibody

Flow cytometry scatter plots showing untreated human peripheral mononuclear cells (PBMCs) (top) and PBMCs activated with 5 µg/ml PHA for 18h (bottom), either stained with ab326181 (right) or FMO control (left). The cells were fixed using BD CytoFix/CytoPerm™ (20 min). The cells were incubated in 1x PBS containing 10 µg/ml human IgG, 10% normal goat serum and BD Pharmingen™ MonoBlock™ Leukocyte Staining Buffer (1/10) to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab326181) (1x 106 in 100µl at 1 µg/ml (1/200)) for 30min on ice. The cells were simultaneously stained with CD3. Acquisition of >30000 events were collected using a 100 mW Violet laser (405nm) and 450/45 bandpass filter.This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.

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