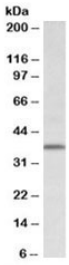
Tfb2m Antibody / Mitochondrial transcription factor B2 (R35697)

Catalog No.	Formulation	Size
R35697-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Mouse, Rat
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
UniProt	Q3TL26
Gene ID	15278
Applications	Western Blot : 0.5-2ug/ml ELISA (peptide) LOD : 1:4000
Limitations	This Tfb2m antibody is available for research use only.



Western blot analysis of TFB2M using TFB2M antibody. Lane 1: rat lung tissue lysate. A single band is detected at approximately 37 kDa. Although the predicted molecular weight of TFB2M is ~46 kDa, mitochondrial processing following import can result in a lower apparent molecular weight. The band observed at ~37 kDa is consistent with the mature, processed form of mitochondrial transcription factor B2.

Description

Tfb2m antibody targets Mitochondrial transcription factor B2, encoded by the TFB2M gene. Mitochondrial transcription factor B2 is a nuclear-encoded protein that localizes to mitochondria, where it plays a central role in mitochondrial gene expression. Following synthesis in the cytoplasm, TFB2M is imported into mitochondria and functions within the mitochondrial transcription machinery. This protein is essential for proper transcription of mitochondrial DNA, supporting expression of genes required for oxidative phosphorylation and energy metabolism.

Mitochondrial transcription factor B2 functions as a transcriptional cofactor that works in conjunction with the mitochondrial RNA polymerase and transcription factor A, mitochondrial. Through these interactions, TFB2M promotes initiation of mitochondrial transcription and stabilization of transcriptional complexes at mitochondrial promoters. Its activity ensures coordinated expression of mitochondrial-encoded components of the respiratory chain, linking nuclear and mitochondrial gene regulation. A Tfb2m antibody supports studies focused on mitochondrial transcription and regulation of organelle-specific gene expression.

TFB2M is broadly expressed across tissues, reflecting the universal requirement for mitochondrial function in energy production. Expression is particularly relevant in metabolically active tissues, where high mitochondrial activity demands precise control of mitochondrial gene transcription. Within the cell, mitochondrial transcription factor B2 is localized to the mitochondrial matrix, consistent with its role in direct regulation of mitochondrial DNA transcription.

From a biological and disease-relevance perspective, proper regulation of mitochondrial transcription is critical for cellular homeostasis. Altered TFB2M function has been investigated in the context of mitochondrial dysfunction, which is a contributing factor in metabolic disorders, neurodegenerative disease, and aging. Disruption of mitochondrial gene expression can impair respiratory chain activity and cellular energy balance, highlighting the importance of proteins such as mitochondrial transcription factor B2 in maintaining normal cellular physiology.

At the molecular level, Mitochondrial transcription factor B2 contains conserved regions required for interaction with mitochondrial transcription machinery and mitochondrial DNA. Post-translational processing associated with mitochondrial import and functional regulation can influence its behavior in biochemical assays without altering the underlying amino acid sequence. Tfb2m antibody reagents support research applications focused on mitochondrial biology, transcriptional regulation, and disease-associated changes in mitochondrial function, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the Tfb2m antibody should be determined by the researcher.

Immunogen

Amino acids RNLVRDLLEHQNPS were used as the immunogen for this Tfb2m antibody.

Storage

Aliquot and store the Tfb2m antibody at -20oC.