

TFAM Protein, Mouse (His, Myc)

Cat. No.:	HY-P701316
Synonyms:	Transcription factor A, mitochondrial; mtTFA; Testis-specific high mobility group protein (TS-HMG); Hmgts
Species:	Mouse
Source:	E. coli
Accession:	P40630 (S43-H243)
Gene ID:	21780
Molecular Weight:	34 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μ m filtered solution of 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The TFAM protein plays a pivotal role in mitochondrial transcription regulation by binding to the mitochondrial light strand promoter. As a crucial component of the mitochondrial transcription initiation complex, which includes TFB2M and POLRMT, TFAM is essential for the basal transcription of mitochondrial DNA. Within this complex, TFAM recruits POLRMT to a specific promoter, while TFB2M induces structural changes in POLRMT, facilitating promoter opening and trapping of the DNA non-template strand. TFAM is also indispensable for accurate and efficient promoter recognition by the mitochondrial RNA polymerase. It further promotes transcription initiation from the HSP1 and the light strand promoter by binding immediately upstream of transcriptional start sites. With the ability to unwind DNA and bend the mitochondrial light strand promoter DNA into a U-turn shape via its HMG boxes, TFAM plays a critical role in maintaining normal levels of mitochondrial DNA. Moreover, it may contribute to organizing and compacting mitochondrial DNA and potentially function in transcriptional activation or have a structural role in the compaction of nuclear DNA during spermatogenesis.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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