ATP5F1A Protein, Human (His-SUMO)

Cat. No.:	HY-P72096
Synonyms:	ATP synthase alpha chain; ATP synthase alpha chain; mitochondrial; ATP synthase subunit alpha; ATP synthase subunit alpha mitochondrial; ATP synthase; H+ transporting; mitochondrial F1 complex; alpha subunit 1; cardiac muscle; ATP synthase; H+ transporting; mitochondrial F1 complex; alpha subunit; 1; ATP synthase; H+ transporting; mitochondrial F1 complex; alpha subunit; isoform 1; cardiac muscle; ATP synthase; H+ transporting; mitochondrial F1 complex; alpha subunit; isoform 2; non-cardiac muscle-like 2; ATP sythase F1 ATPase; alpha subunit; ATP5A; Atp5a1; ATP5AL2; ATPA_HUMAN; ATPM; Epididymis secretory sperm binding protein Li 123m; hATP1; HEL-S-123m; MC5DN4; mitochondrial; Mitochondrial ATP synthetase; Mitochondrial ATP synthetase oligomycin resistant; Modifier of Min 2; Modifier of Min 2 mouse homolog; Modifier of Min 2; mouse; homolog of; MOM2; OMR; ORM; OTTHUMP00000163475
Species:	Human
Source:	E. coli
Accession:	P25705 (Q44-A553)
Gene ID:	498
Molecular Weight:	Approximately 71.2 kDa

PROPERTIES

AA Sequence	Q K T G T A E M S S I L E E R I L G A D T S V D L E E T G R V L S I G D G I A R V H G L R N V Q A E E M V E F S S G L K G M S L N L E P D N V G V V V F G N D K L I K E G D I V K R T G A I V D V P V G E E L L G R V V D A L G N A I D G K G P I G S K T R R R V G L K A P G I I P R I S V R E P M Q T G I K A V D S L V P I G R G Q R E L I I G D R Q T G K T S I A I D T I I N Q K R F N D G S D E K K K L Y C I Y V A I G Q K R S T V A Q L V K R L T D A D A M K Y T I V V S A T A S D A A P L Q Y L A P Y S G C S M G E Y F R D N G K H A L I I Y D D L S K Q A V A Y R Q M S L L L R R P P G R E A Y P G D V F Y L H S R L L E R A A K M N D A F G G G S L T A L P V I E T Q A G D V S A Y I P T N V I S I T D G Q I F L E T E L F Y K G I R P A I N V G L S V S R V G S A A Q T R A M K Q V A G T M K L E L A Q Y R E V A A F A Q F G S D L D A A T Q Q L L S R G V R L T E L L K Q G Q Y S P M A I E E Q V A V I Y A G V R G Y L D K L E P S K I T K F E N A F L S H V V S Q H Q A L L G T I R A D G K I S E Q S D A K L K E I V T N F L A G F E A
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm solution of Tris-based buffer, 50% Glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.

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	ATP5F1A, a crucial component of the mitochondrial membrane ATP synthase (F(1)F(0) ATP synthase or Complex V), plays a pivotal role in ATP production from ADP by harnessing the proton gradient across the membrane generated by the respiratory chain's electron transport complexes. Comprising the catalytic core (F(1)) and the membrane proton channel (F(0)), F-type ATPases, like ATP5F1A, consist of multiple subunits with distinct functions. The alpha and beta subunits form the catalytic core in F(1), where rotation of the central stalk against surrounding alpha(3)beta(3) subunits facilitates ATP hydrolysis. Intriguingly, ATP5F1A binds the bacterial siderophore enterobactin, promoting the accumulation of enterobactin-derived iron ions within mitochondria. Additionally, ATP5F1A interacts with various proteins, such as ATPAF2, HRG, PLG, BLOC1S1, BCL2L1 isoform BCL-X(L), CLN5, PPT1, S100A1, and ABCB7, influencing diverse cellular processes ranging from metabolic efficiency and iron homeostasis to apoptotic regulation. Furthermore, ATP5F1A is a crucial component of the ATP synthase complex, highlighting its central role in cellular energy production. Understanding these intricate interactions sheds light on the multifaceted functions of ATP5F1A in cellular physiology.

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