**Proteins** 

# **Screening Libraries**

# **Product** Data Sheet

# ATP5F1A Protein, Human (His)

Cat. No.: HY-P72095

Synonyms: ATP synthase alpha chain; ATP synthase alpha chain; mitochondrial; ATP synthase; H+

> transporting; mitochondrial F1 complex; alpha subunit 1; cardiac muscle; ; ATP synthase; H+ transporting; mitochondrial F1 complex; alpha subunit; isoform 2; alpha subunit; ATP5A; Atp5a1; ATP5AL2; ATPA\_HUMAN; ATPM; hATP1; HEL-S-123m; MC5DN4; mitochondrial;

Species: Human E. coli Source:

Accession: P25705 (Q44-A553)

Gene ID: 498

Molecular Weight: Approximately 59.2 kDa

# **PROPERTIES**

AA Sequence  QKTGTAEMSS ILEERILGAD TSVDLEETGR VLSIGDGIAR VHGLRNVQAE EMVEFSSGLK GMSLNLEPDN VGVVVFGNDK LIKEGDIVKR TGAIVDVPVG EELLGRVVDA LGNAIDGKGP IGSKTRRVG LKAPGIIPRI SVREPMQTGI KAVDSLVPIG RGQRELIIGD RQTGKTSIAI DTIINQKRFN DGSDEKKKLY CIYVAIGQKR STVAQLVKRL TDADAMKYTI VVSATASDAA PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
LIKEGDIVKR TGAIVDVPVG EELLGRVVDA LGNAIDGKGP IGSKTRRRVG LKAPGIIPRI SVREPMQTGI KAVDSLVPIG RGQRELIIGD RQTGKTSIAI DTIINQKRFN DGSDEKKKLY CIYVAIGQKR STVAQLVKRL TDADAMKYTI VVSATASDAA PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
IGSKTRRRVG LKAPGIIPRI SVREPMQTGI KAVDSLVPIG RGQRELIIGD RQTGKTSIAI DTIINQKRFN DGSDEKKKLY CIYVAIGQKR STVAQLVKRL TDADAMKYTI VVSATASDAA PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
RGQRELIIGD RQTGKTSIAI DTIINQKRFN DGSDEKKKLY CIYVAIGQKR STVAQLVKRL TDADAMKYTI VVSATASDAA PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
CIYVAIGQKR STVAQLVKRL TDADAMKYTI VVSATASDAA PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
PLQYLAPYSG CSMGEYFRDN GKHALIIYDD LSKQAVAYRQ MSLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
MSLLLRRPPG REAYPGDVFY LHSRLLERAA KMNDAFGGGS LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
LTALPVIETQ AGDVSAYIPT NVISITDGQI FLETELFYKG IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
IRPAINVGLS VSRVGSAAQT RAMKQVAGTM KLELAQYREV AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
AAFAQFGSDL DAATQQLLSR GVRLTELLKQ GQYSPMAIEE QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
QVAVIYAGVR GYLDKLEPSK ITKFENAFLS HVVSQHQALL GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
GTIRADGKIS EQSDAKLKEI VTNFLAGFEA
<b>Biological Activity</b> The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
<b>g</b>
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.
$\label{eq:Reconstitution} \textbf{Reconstitution} \qquad \textbf{It is not recommended to reconstitute to a concentration less than 100 $\mu g/mL$ 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.

Page 1 of 2

# **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.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA