

## ATP5F1A Protein, Human, Recombinant (His)

## General Information

Synonyms:	ATP5AL2;ATP5A1;ATP synthase F1 subunit alpha;ATP synthase subunit alpha, mitochondrial; mitochondrial;ATPM;ATP5A;ATP5F1A
Protein Construction:	44-553 aa
Species:	Human
Expression Host:	E. coli
Accession:	P25705
Molecular Weight:	59.2 kDa (predicted)
AA Sequence:	<p>QKTGTAEMSSILEERILGADTSVDLEETGRVLSIGDGIARVHGLRNVQAEEMVEFSSGLKGMSLNLEPDNVGVV VFGNDKLIKEGDIVKRTGAIVDVPVGEELLGRVVDALGNAIDGKGPISKTRRRVGLKAPGIIPRISVREPMQTGI KAVDSLVPPIGRGQRELIIGDRQTGKTSIAIDTIINQKRFNDGSDEKLLYCIYVAIGQKRSTVAQLVKRLTDADA MKYTIVVSATASDAAPLQYLAPYSGCSMGEYFRDNGKHALIYDDLKQAVAYRQMSLLRRPPGREAYPGD VFYLHSRLLERAAMNDAFGGGSLTALPIETQAGDVSAYIPTNVISITDGGQIFLETIFYKIRPAINVGLSVSR VGSAAQTRAMKQVAGTMKLELAQYREVAFAQFGSDLDAATQQLSRGVRLTELLKQGQYSPMAIEEQVAV IYAGVRGYLDKLEPSKITKFENAFLSHVVSQHQALLGTIRADGKISEQSDAKLKEIVTNFLAGFEA</p>

## QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

## Preparation and Storage

## Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

## Stability &amp; Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

## Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

## Protein Background

Mitochondrial membrane ATP synthase (F<sub>1</sub>F<sub>0</sub>) ATP synthase or Complex V) produces ATP from ADP in the presence of a proton gradient across the membrane which is generated by electron transport complexes of the respiratory chain. F-type ATPases consist of two structural domains, F<sub>1</sub> - containing the extramembraneous catalytic core, and F<sub>0</sub> - containing the membrane proton channel, linked together by a central stalk and a peripheral stalk. During catalysis, ATP synthesis in the catalytic domain of F<sub>1</sub> is coupled via a rotary mechanism of the central stalk subunits to proton translocation. Subunits alpha and beta form the catalytic core in F<sub>1</sub>. Rotation of the central stalk against the surrounding alpha<sub>3</sub>beta<sub>3</sub> subunits leads to hydrolysis of ATP in three separate catalytic sites on the beta subunits. Subunit alpha does not bear the catalytic high-affinity ATP-binding sites. Binds the bacterial siderophore enterobactin and can promote mitochondrial accumulation of enterobactin-derived iron ions.

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