ATP2A2 Protein, Human (His)

Cat. No.:	HY-P72094
Synonyms:	Atp2a2; ATP2B; ATPase Ca++ transporting cardiac muscle slow twitch 2; Calcium pump 2; ATPase 2
Species:	Human
Source:	E. coli
Accession:	P16615 (V314-M756)
Gene ID:	488
Molecular Weight:	Approximately 56 kDa

PROPERTIES

AA Sequence

V I T T C L A L G T R R M A K K N A I V R S L P S V E T L G C T S V I C S D K T
G T L T T N Q M S V C R M F I L D R V E G D T C S L N E F T I T G S T Y A P I G
E V H K D D K P V N C H Q Y D G L V E L A T I C A L C N D S A L D Y N E A K G V
Y E K V G E A T E T A L T C L V E K M N V F D T E L K G L S K I E R A N A C N S
V I K Q L M K K E F T L E F S R D R K S M S V Y C T P N K P S R T S M S K M F V
K G A P E G V I D R C T H I R V G S T K V P M T S G V K Q K I M S V I R E W G S
G S D T L R C L A L A T H D N P L R R E E M H L E D S A N F I K Y E T N L T F V
G C V G M L D P P R I E V A S S V K L C R Q A G I R V I M I T G D N K G T A V A
I C R R I G I F G Q D E D V T S K A F T G R E F D E L N P S A Q R D A C L N A R
C F A R V E P S H K S K I V E F L Q S F D E I T A M T G D G V N D A P A L K K A
E I G I A M G S G T A V A K T A S E M V L A D D N F S T I V A A V E E G R A I Y
N N M

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 sterile filtered PBS, 6% Trehalose, pH 7.4 or 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.
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	The ATP2A2 protein, a magnesium-dependent enzyme, catalyzes the hydrolysis of ATP, facilitating the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen. Beyond its role in calcium transport, ATP2A2 is implicated in autophagy response to starvation, where it interacts with VMP1 to control ER-isolation membrane contacts for autophagosome formation. Additionally, ATP2A2 modulates ER contacts with lipid droplets, mitochondria, and endosomes, showcasing its versatile involvement in cellular processes. In collaboration with FLVCR2, ATP2A2 mediates heme-stimulated switching from mitochondrial ATP synthesis to thermogenesis. It also serves as a crucial regulator of TNFSF11-mediated Ca(2+) signaling pathways, interacting with TMEM64 to activate CREB1 and induce mitochondrial ROS generation. This intricate network of interactions underscores ATP2A2's pivotal role in the regulation of cellular processes, ranging from calcium homeostasis to autophagy and osteoclast differentiation.

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