ATP6V1F Protein, Human

Cat. No.:	HY-P76159A
Synonyms:	V-type proton ATPase subunit F
Species:	Human
Source:	E. coli
Accession:	Q16864 (M1-R119)
Gene ID:	9296
Molecular Weight:	Approximately 13 kDa.

PROPERTIES

AA Sequence	M A G R G K L I A V I G D E D T V T G F L L G G I G E L N K N R H P N F L V V E K D T T I N E I E D T F R Q F L N R D D I G I I L I N Q Y I A E M V R H A L D A H Q Q S I P A V L E I P S K E H P Y D A A K D S I L R R A R G M F T A E D L R
Biological Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human ATP6V1F is present at 2 μg/mL, can bind ATP6V1F antibody. The ED_{50} for this effect is 195 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.
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. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	ATP6V1F, a vital subunit of the V1 complex of vacuolar(H+)-ATPase (V-ATPase), constitutes part of the multisubunit enzyme that plays a central role in cellular pH regulation. This enzyme is a heteromultimeric assembly comprising two essential complexes: the ATP-hydrolytic V1 complex and the proton translocation V0 complex. Within the V1 complex, ATP6V1F contributes to the formation of the catalytic AB heterodimers, constituting a heterohexamer, and the peripheral stalks comprised of EG heterodimers. Additionally, it is an integral part of the central rotor, working in concert with subunit D. The V1 complex is responsible for ATP hydrolysis, whereas the V0 complex, in which ATP6V1F is not directly mentioned but is

implied, is crucial for proton translocation across membranes. This proton transport involves various subunits, including the proton transport subunit a, a ring of proteolipid subunits c9c'', rotary subunit d, subunits e and f, and accessory subunits ATP6AP1/Ac45 and ATP6AP2/PRR. The cooperative action of these subunits underscores the significance of ATP6V1F in the intricate machinery of V-ATPase, which acidifies and maintains pH in cellular compartments and, in certain cell types, at the plasma membrane, thereby influencing various physiological processes.

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