

ATP1B4 Protein, Human, Recombinant (His)

General Information

Synonyms:	ATPase, Na ⁺ /K ⁺ transporting, β 4 polypeptide;ATPase, Na ⁺ /K ⁺ transporting, beta 4 polypeptide
Protein Construction:	A DNA sequence encoding the human ATP1B4 (Q9UN42-1) (Tyr132-Thr357) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	Q9UN42-1
Molecular Weight:	27.35 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 20 mM Tris, pH8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

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 & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. 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

ATP1B4 is a member of the X(+)/potassium ATPases subunit beta family. It is highly expressed in skeletal muscle and at a lower level in heart. ATP1B4 gene can be found in all vertebrate genomes sequenced to date. However, this gene has undergone a change in function in placental mammals compared to other species. Specifically, in fish, avian, and amphibian species, this gene encodes plasma membrane-bound beta-subunits of Na, K-ATPase.

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In placental mammals, the encoded protein interacts with the nuclear transcriptional coregulator SKIP and may be involved in the regulation of TGF-beta signaling. ATP1B4 may act as a transcriptional coregulator during muscle development through its interaction with SNW1. Na⁺, K⁺-ATPase is an important regulator of intracellular electrolyte levels in most mammalian cells. It is a Mg²⁺-dependent transport pump responsible for maintaining the low intracellular Na⁺:K⁺ ratio that is essential for cell homeostasis and physiological function. It catalyzes the active uptake of K⁺ and extrusion of Na⁺ at the expense of hydrolyzing ATP with a stoichiometry of 3 Na⁺ for 2 K⁺. ATP1B4 has lost its ancestral function as a Na,K-ATPase beta-subunit.

Reference

Pestov NB. et al., 2007, Proc Natl Acad Sci. 104 (27): 11215-20.

Kung AW. et al., 2006, Clin Endocrinol. 64 (2): 158-61.

Gerhard DS. et al., 2004, Genome Res. 14 (10B): 2121-7.

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