10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Rat Atp1a1 Antibody (N-term S23)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20549a

Product Information

Application	WB, E
Primary Accession	P06685
Reactivity	Human, Rat, Mouse
Predicted	Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB43781
Calculated MW	113054

Additional Information

Gene ID	24211
Other Names	Sodium/potassium-transporting ATPase subunit alpha-1, Na(+)/K(+) ATPase alpha-1 subunit, Sodium pump subunit alpha-1, Atp1a1
Target/Specificity	This Rat Atp1a1 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from Rat Atp1a1.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Rat Atp1a1 Antibody (N-term S23) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Atp1a1
Function	Catalytic subunit of the Na(+)/K(+)-ATPase pump that hydrolyzes ATP to exchange ions across the plasma membrane, exporting 3 Na(+) and importing 2 K(+) per cycle against electrochemical gradients. It undergoes ATP-driven conformational changes that allow alternating binding and release of Na(+) and K(+) ions across the membrane (PubMed:17939993, PubMed:30388404).

	This process maintains essential Na(+) and K(+) gradients for membrane potential and cellular function. Could also be part of an osmosensory signaling pathway that senses body-fluid sodium levels and controls salt intake behavior as well as voluntary water intake to regulate sodium homeostasis (By similarity).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:Q8VDN2}; Multi-pass membrane protein {ECO:0000250|UniProtKB:P05023}. Basolateral cell membrane; Multi-pass membrane protein. Cell membrane, sarcolemma {ECO:0000250|UniProtKB:P05023}; Multi-pass membrane protein {ECO:0000250|UniProtKB:P05023}. Cell projection, axon. Melanosome {ECO:0000250|UniProtKB:P05023}
Tissue Location	Expressed in the central nervous system, in most motor and sensory axons of the ventral and dorsal roots, as well as in the large motor neurons of the ventral horn (at protein level)

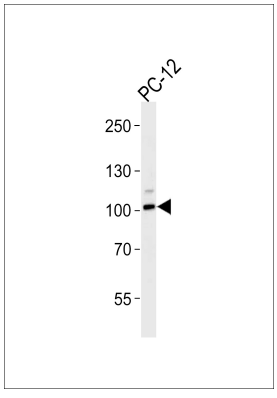
Background

This is the catalytic component of the active enzyme, which catalyzes the hydrolysis of ATP coupled with the exchange of sodium and potassium ions across the plasma membrane. This action creates the electrochemical gradient of sodium and potassium ions, providing the energy for active transport of various nutrients.

References

Shull G.E.,et al.Biochemistry 25:8125-8132(1986).
Hara Y.,et al.J. Biochem. 102:43-58(1987).
Herrera V.L.M.,et al.J. Cell Biol. 105:1855-1865(1987).
Lubec G.,et al.Submitted (JUL-2007) to UniProtKB.
Schneider J.W.,et al.Proc. Natl. Acad. Sci. U.S.A. 82:6357-6361(1985).

Images



Western blot analysis of lysate from PC-12 cell line,using Rat Atp1a1 Antibody (S23)(Cat. #AP20549a).AP20549a was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody.Lysate at 35ug per lane.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.