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ATP2C1 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1354a

Product Information

Application	WB, IHC, E
Primary Accession	P98194
Reactivity	Human, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	4G12
Isotype	IgG1
Calculated MW	100577
Description	ATP2C1, also known as PMR1, it belongs to the family of P-type cation transport ATPases. This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the transport of the calcium. The human homologue, ATP2C1 (alsodesignated SPLA in rat), also regulates the transport of calcium in the Golgicomplex and is related to other P-type ATPases family members, such as thesarco(endo)plasmic calcium ATPase (SERCA) and the plasma membrane calciumATPase (PCMA). ATP2C1 is a transmembrane protein that exists as twosplice variants, which vary by 20 amino acids. Defects in ATP2C1 cause Hailey-Hailey disease, which is an autosomal dominant disorder that is characterized by blisters and erosions of the skin. These findings provide further evidence that PMR1 plays a key role in maintaining the integrity of the epidermis by controlling intracellular calcium signaling.
Immunogen	Purified recombinant fragment of ATP2C1 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	27032
Other Names	Calcium-transporting ATPase type 2C member 1, ATPase 2C1, 3.6.3.8, ATP-dependent Ca(2+) pump PMR1, ATP2C1, KIAA1347, PMR1L
Dilution	WB~~1/500 - 1/2000 IHC~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ATP2C1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATP2C1 {ECO:0000303|PubMed:10615129, ECO:0000312|HGNC:HGNC:13211}
Function	ATP-driven pump that supplies the Golgi apparatus with Ca(2+) and Mn(2+) ions, both essential cofactors for processing and trafficking of newly synthesized proteins in the secretory pathway (PubMed:12707275, PubMed:16192278, PubMed:20439740, PubMed:21187401, PubMed:30923126). Within a catalytic cycle, acquires Ca(2+) or Mn(2+) ions on the cytoplasmic side of the membrane and delivers them to the lumenal side. The transfer of ions across the membrane is coupled to ATP hydrolysis and is associated with a transient phosphorylation that shifts the pump conformation from inward-facing to outward-facing state (PubMed:16192278, PubMed:16332677, PubMed:30923126). Plays a primary role in the maintenance of Ca(2+) homeostasis in the trans-Golgi compartment with a functional impact on Golgi and post-Golgi protein sorting as well as a structural impact on cisternae morphology (PubMed:14632183, PubMed:20439740). Responsible for loading the Golgi stores with Ca(2+) ions in keratinocytes, contributing to keratinocyte differentiation and epidermis integrity (PubMed:10615129, PubMed:14632183, PubMed:20439740). Participates in Ca(2+) and Mn(2+) ions uptake into the Golgi store of hippocampal neurons and regulates protein trafficking required for neural polarity (By similarity). May also play a role in the maintenance of Ca(2+) and Mn(2+) homeostasis and signaling in the cytosol while preventing cytotoxicity (PubMed:21187401).
Cellular Location	Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein. Golgi apparatus, Golgi stack membrane; Multi-pass membrane protein. Note=During neuron differentiation, shifts from juxtanuclear Golgi position to multiple Golgi structures distributed over the neural soma with a predominance in the apical dendritic trunk {ECO:0000250|UniProtKB:Q80XR2}
Tissue Location	Found in most tissues except colon, thymus, spleen and leukocytes (PubMed:15831496). Expressed in keratinocytes (at protein level) (PubMed:14632183, PubMed:15831496)

References

1. J Invest Dermatol. 2005 Nov;125(5):933-5. 2. J Dermatol Sci. 2006 Aug;43(2):150-1. 3. Dermatology. 2007;215(4):277-83.

Images

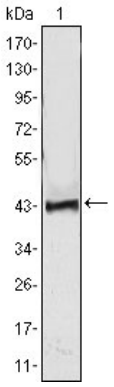


Figure 1: Western blot analysis using ATP2C1 mAb against human ATP2C1 (AA: 119-269) recombinant protein. (Expected MW is 41.7 kDa)

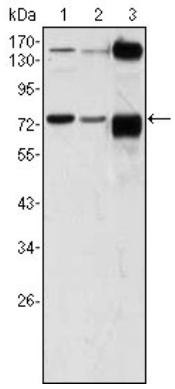


Figure 2: Western blot analysis using ATP2C1 mouse mAb against A431 (1), Hela (2) and HEK293 (3) cell lysate.

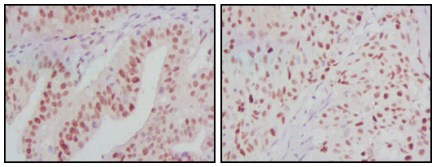


Figure 3: Immunohistochemical analysis of paraffin-embedded human ovarian cancer (left) and breast cancer (right) tissues using ATP2C1 mouse mAb with DAB staining.

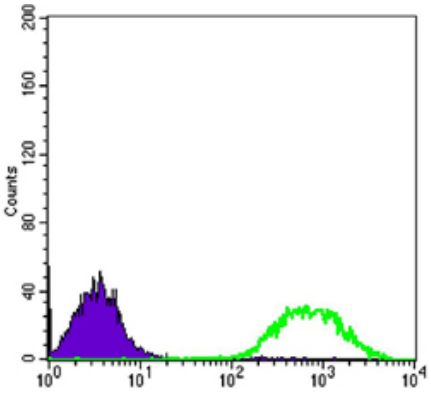


Figure 4: Flow cytometric analysis of Jurkat cells using anti-ETS1 mAb (green) and negative control (purple).

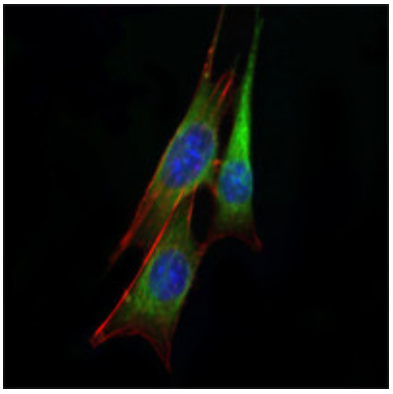


Figure 2:Immunofluorescence analysis of NIH-3T3 cells using anti-ETS1 mAb (green). Blue: DRAQ5 fluorescent DNA dye.

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