abcam

ab210143

Alexa Fluor® 405 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 405
Excitation/Emission	Ex: 401nm, Em: 421nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1845Y
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	The cellular localisation of this product has been verified in ICC/IF

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Tilapia
Dilution info	-
Notes	-

ICC/IF

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Tilapia
Dilution info	-
Notes	-

IHC-P

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Predicted

Species	Tilapia
Dilution info	-
Notes	-

Target data

See full target information ATP1A1

Function	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 (PubMed:29499166, PubMed:30388404). 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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Sodium Potassium ATPase also known as Na/K-ATPase or NaK Pump is an essential enzyme that performs active transport of sodium (Na+) and potassium (K+) ions across the plasma membrane. This transmembrane protein has a molecular weight typically ranging from 100 to 120 kDa. It is expressed in most cell types particularly abundant in nerve and muscle cells. The ATPase hydrolyzes ATP to drive the exchange of three intracellular sodium ions for two extracellular potassium ions maintaining vital gradients across the cell membrane.
Biological function summary	The Na/K ATPase plays an important role in maintaining cellular homeostasis and membrane potential. It is an integral component of the cell membrane often operating as part of larger multiprotein complexes. This pump is responsible for providing the driving force behind secondary transport systems by maintaining ionic gradients. The presence of Na/K ATPase is also important for the functioning of the nervous system as it helps propagate action potentials in neurons.
Pathways	The Na/K ATPase is integral to the regulation of cardiac contraction and nerve signal transmission. It participates in pathways like the cardiac glycoside pharmacodynamics and the sodium ion transport pathway. It interacts with proteins such as ankyrin which link the ATPase to the cellular cytoskeleton facilitating its distribution and stability within the cell membrane. These interactions are significant for ensuring precise ion homeostasis and efficient cellular operation.
Associated diseases and disorders	Na/K ATPase is linked to conditions such as hypertension and congestive heart failure. These diseases are associated with improper functioning or regulation of the ATPase which affects sodium and potassium balance and blood pressure regulation. The target also interacts with the protein PLM (phospholemman) which modulates its activity under different physiological and pathological conditions. Malfunction or mutations in the genes encoding Na/K ATPase subunits can contribute to neurological and cardiovascular disorders making it a therapeutic target in associated treatment strategies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

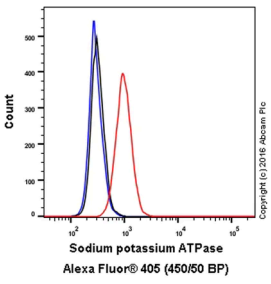
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry (Intracellular) - Alexa Fluor® 405 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker (ab210143)

Sodium Potassium ATPase Flow Cytometry (Intracellular) staining using rabbit Anti-Sodium Potassium ATPase antibody

Overlay histogram showing HeLa cells stained with ab210143 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab210143, 1/50 dilution) for 30 min at 22°C.
Isotype control antibody (black line) was Rabbit IgG (monoclonal) Alexa Fluor® 405 (ab208150) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Violet laser (405nm) and 450/50 bandpass filter.

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