abcam

ab274883

Alexa Fluor® 555 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 555
Excitation/Emission	Ex: 555nm, Em: 565nm
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

mIHC

Tested

Species	Human
Dilution info	1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in MCF7 fixed with 100% methanol (5 min).

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

ICC/IF

Expected

Species	Human, Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Expected

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

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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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

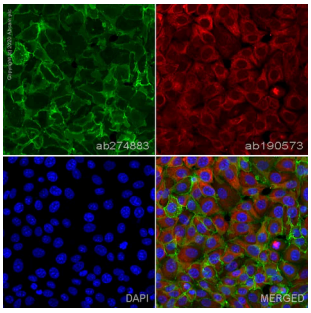
We do not recommend this combination. It is not covered by our product promise.

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.

Full details and terms and conditions can be found here:
Terms & Conditions.

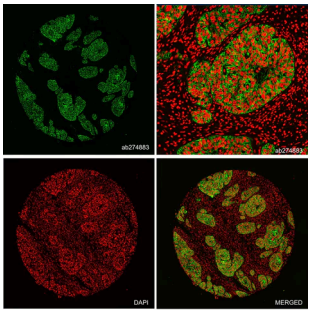
2 product images



Immunocytochemistry - Alexa Fluor® 555 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker (ab274883)

Sodium Potassium ATPase Immunocytochemistry staining using rabbit Anti-Sodium Potassium ATPase antibody

Immunofluorescence analysis of MCF7 (Human breast adenocarcinoma cell line) cells labeling Sodium Potassium ATPase with ab274883.
The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were tehn incubated with ab274883 at 1/100 dilution, overnight at +4°C (Green) and ab190573, Rabbit monoclonal to alphaTubulin (Alexa Fluor® 647), at 1/250 dilution (Red). Nuclear DNA was labelled with DAPI (Blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Multiplex immunohistochemistry - Alexa Fluor® 555 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker (ab274883)

Sodium Potassium ATPase Multiplex immunohistochemistry staining of Human Cervical Squamous Cell Carcinoma using rabbit Anti-Sodium Potassium ATPase antibody

Immunofluorescence analysis of human cervical squamous cell carcinoma labelled with ab274883. Image was acquired using Cell DIVE Multiplexed Imaging Solution (Leica Microsystems).

Formalin fixed paraffin embedded (FFPE) sections were incubated with ab274883 at 1/100 dilution, for 1h at room temperature. Nuclear DNA was labelled with DAPI (Red). Deparaffinization, antigen retrieval, biomarker labeling and imaging was performed following Cell DIVE recommended standard protocol. Cell DIVE automatically processed the image to perform autofluorescence removal, distortion correction, blank glass subtraction, flat-field correction, and stitching.

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