abcam

ab197713

Alexa Fluor® 488 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker

Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker - Alexa Fluor® 488 conjugated (ab197713) is a rabbit recombinant monoclonal antibody detecting Sodium Potassium ATPase in **ICC/IF**. Suitable for **Human**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
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

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	This product gave a positive signal in HeLa cells fixed with 100% methanol (5 min).

Expected

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

Flow Cyt (Intra)

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

What is this antibody validated in?
Alexa Fluor® 488 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker (ab197713) is a rabbit recombinant monoclonal antibody and is validated for use in Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

Related products
Antibody clone EP1845Y is also available pre-conjugated to a variety of labels for your convenience – Anti-Sodium Potassium ATPase Alexa Fluor® 488 [EP1845Y] - Plasma Membrane Marker (ab197713).

Other related products
We have a range of other formats of antibody clone [EP1845Y] also available for your convenience: ab76020, Carrier free - ab167390, HRP - ab185065, Alexa Fluor® 488 - ab197713, Biotin - ab198366, Alexa Fluor® 647 - ab198367, PE - ab209299, Alexa Fluor® 405 - ab210143, Alexa Fluor® 555 - ab274883, ab283318, Carrier free - ab283340, Carrier free - ab283341, ab283345, APC - ab314288

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.

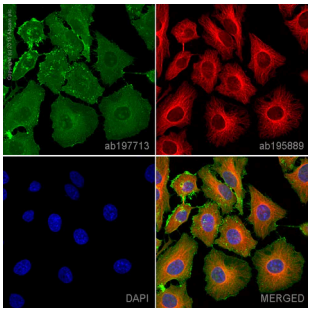
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1 product image



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-Sodium Potassium ATPase antibody [EP1845Y] - Plasma Membrane Marker (ab197713)

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

ab197713 staining Sodium Potassium ATPase in HeLa cells. 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 then incubated overnight at +4°C with ab197713 at a 1/50 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at a 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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