

iFluor™ 594 Conjugated Anti-Sodium Potassium ATPase Antibody [ST0533]

HA720175F



<b>Product Type:</b>	Recombinant Rabbit monoclonal IgG, primary antibodies
<b>Species reactivity:</b>	Human, Mouse, Rat
<b>Applications:</b>	IF-Tissue
<b>Molecular Wt:</b>	Predicted band size: 100 kDa
<b>Clone number:</b>	ST0533

**Description:** The sodium-potassium pump (sodium-potassium adenosine triphosphatase, also known as Na<sup>+</sup>/K<sup>+</sup>-ATPase, Na<sup>+</sup>/K<sup>+</sup> pump, or sodium-potassium ATPase) is an enzyme (an electrogenic transmembrane ATPase) found in the membrane of all animal cells. It performs several functions in cell physiology. The Na<sup>+</sup>/K<sup>+</sup>-ATPase helps maintain resting potential, affects transport, and regulates cellular volume. It also functions as a signal transducer/integrator to regulate the MAPK pathway, reactive oxygen species (ROS), as well as intracellular calcium. In fact, all cells expend a large fraction of the ATP they produce (typically 30% and up to 70% in nerve cells) to maintain their required cytosolic Na and K concentrations. For neurons, the Na<sup>+</sup>/K<sup>+</sup>-ATPase can be responsible for up to 3/4 of the cell's energy expenditure. In many types of tissue, ATP consumption by the Na<sup>+</sup>/K<sup>+</sup>-ATPases have been related to glycolysis. This was first discovered in red blood cells (Schrier, 1966), but has later been evidenced in renal cells, smooth muscles surrounding the blood vessels,[6] and cardiac purkinje cells. Recently, glycolysis has also been shown to be of particular importance for Na<sup>+</sup>/K<sup>+</sup>-ATPases in skeletal muscles, where inhibition of glycogen breakdown (a substrate for glycolysis) leads to reduced Na<sup>+</sup>/K<sup>+</sup>-ATPase activity and lower force production.

<b>Conjugate:</b>	iFluor™ 594, Amax: 587nm; Emax: 603nm.
<b>Immunogen:</b>	Synthetic peptide within Human ATP1A1 aa 39-83 / 1023.
<b>Positive control:</b>	Rat kidney tissue, human liver tissue.
<b>Subcellular location:</b>	Cell membrane, Melanosome.
<b>Database links:</b>	SwissProt: P05023 Human   P05026 Human   Q13733 Human   P06685 Rat   P07340 Rat   Q64541 Rat
<b>Recommended Dilutions:</b>	
<b>IF-Tissue</b>	1:100
<b>Storage Buffer:</b>	Preservative: 0.02% Sodium azide Constituents: 30% Glycerol, 1% BSA, 68.98% PBS.
<b>Storage Instruction:</b>	Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.
<b>Purity:</b>	Protein A affinity purified.

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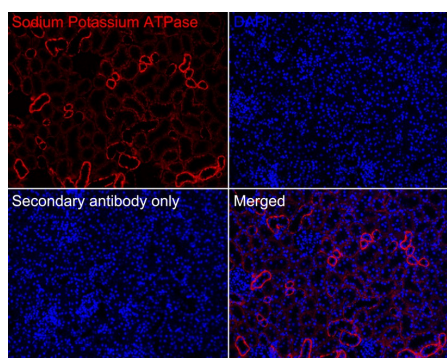
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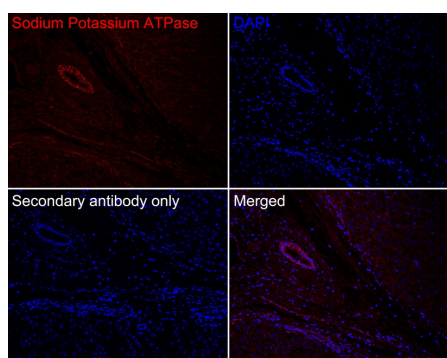
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## Images



**Fig1:** Immunofluorescence analysis of paraffin-embedded rat kidney tissue labeling Sodium Potassium ATPase (HA720175F).

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS. And then probed with the primary antibody Sodium Potassium ATPase (HA720175F, iFluor™ 549) at 1/100 dilution overnight at 4 °C, washed with PBS. DAPI was used as nuclear counterstain.



**Fig2:** Immunofluorescence analysis of paraffin-embedded human liver tissue labeling Sodium Potassium ATPase (HA720175F).

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS. And then probed with the primary antibody Sodium Potassium ATPase (HA720175F, iFluor™ 594) at 1/100 dilution overnight at 4 °C, washed with PBS. DAPI was used as nuclear counterstain.

**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

## Background References

1. Yang SH et al. The lamellae-free-type pseudobranch of the euryhaline milkfish (*Chanos chanos*) is a Na(+), K(+)-ATPase-abundant organ involved in hypoosmoregulation. *Comp Biochem Physiol A Mol Integr Physiol* 170:15-25 (2014).
2. R der PV et al. The role of SGLT1 and GLUT2 in intestinal glucose transport and sensing. *PLoS One* 9:e89977 (2014).

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