# iFluor™ 488 Conjugated Anti-Sodium Potassium ATPase Antibody [ST0533]

# HA720174F

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| **Product Type:** | Recombinant Rabbit monoclonal IgG, primary antibodies |
| **Species reactivity:** | Human, Mouse, Rat |
| **Applications:** | IF-Tissue |
| **Molecular Wt:** | 100 kDa |
| **Clone number:** | ST0533 |

**Description:** The sodium–potassium pump (sodium–potassium adenosine triphosphatase, also known as $Na^+/K^+$-ATPase, $Na^+/K^+$ 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 $Na^+/K^+$-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 $Na^+/K^+$-ATPase can be responsible for up to 3/4 of the cell's energy expenditure. In many types of tissue, ATP consumption by the $Na^+/K^+$-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 $Na^+/K^+$-ATPases in skeletal muscles, where inhibition of glycogen breakdown (a substrate for glycolysis) leads to reduced $Na^+/K^+$-ATPase activity and lower force production.

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| **Conjugate:** | iFluor™ 488, Ex: 491nm; Em: 516nm. |
| **Immunogen:** | Synthetic peptide within Human ATP1A1 aa 39-83 / 1023. |
| **Positive control:** | Rat kidney tissue, human liver tissue. |
| **Subcellular location:** | Cell membrane, Melanosome. |
| **Database links:** | SwissProt: P05023 Human \| P05026 Human \| Q13733 Human \| P06685 Rat \| P07340 Rat \| Q64541 Rat |
| **Recommended Dilutions:** | |
| **IF-Tissue** | 1:100 |
| **Storage Buffer:** | Preservative: 0.02% Sodium azide Constituents: 30% Glycerol, 1% BSA, 68.98% PBS. |
| **Storage Instruction:** | Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles. |
| **Purity:** | Protein A affinity purified. |

## Images

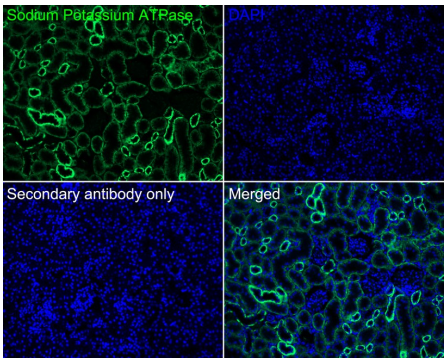


**Fig1:** Immunofluorescence analysis of paraffin-embedded rat kidney tissue labeling Sodium Potassium ATPase (HA720174F).

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 (HA720174F, iFluor™ 488) at 1/100 dilution overnight at 4 ℃, washed with PBS. DAPI was used as nuclear counterstain.

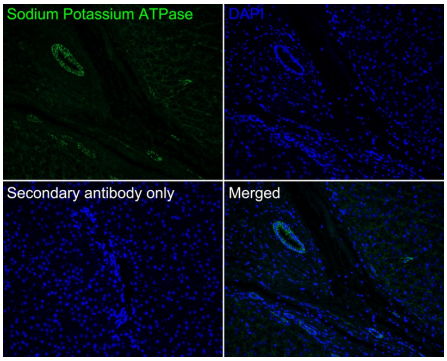


**Fig2:** Immunofluorescence analysis of paraffin-embedded human liver tissue labeling Sodium Potassium ATPase (HA720174F).

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 (HA720174F, iFluor™ 488) at 1/100 dilution overnight at 4 ℃, 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).