

Na⁺/K⁺-ATPase α1 (0.T.1): sc-71638

BACKGROUND

The ubiquitously expressed sodium/potassium-ATPase (Na⁺/K⁺-ATPase) exists as a oligomeric plasma membrane complex that couples the hydrolysis of one molecule of ATP to the importation of three Na⁺ ions and two K⁺ ions against their respective electrochemical gradients. As a member of the P-type family of ion motives, Na⁺/K⁺-ATPase plays a critical role in maintaining cellular volume, resting membrane potential and Na⁺-coupled solute transport. Multiple isoforms of three subunits, α, β and γ, comprise to form the Na⁺/K⁺-ATPase oligomer. The α subunit contains the binding sites for ATP and the cations; the glycosylated β subunit ensures correct folding and membrane insertion of the α subunits. The small γ subunit co-localizes with the α subunit in nephron segments, where it increases the affinity of Na⁺/K⁺-ATPase for ATP. The β subunit, but not the γ subunit, is essential for normal activity of Na⁺/K⁺-ATPase.

CHROMOSOMAL LOCATION

Genetic locus: ATP1A1 (human) mapping to 1p13.1; Atp1a1 (mouse) mapping to 3 F2.2.

SOURCE

Na⁺/K⁺-ATPase α1 (0.T.1) is a mouse monoclonal antibody raised against purified renal outer medulla of rabbit origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Na⁺/K⁺-ATPase α1 (0.T.1) is recommended for detection of Na⁺/K⁺-ATPase α1 of broad species origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Na⁺/K⁺-ATPase α1 siRNA (h): sc-36010, Na⁺/K⁺-ATPase α1 siRNA (m): sc-36011, Na⁺/K⁺-ATPase α1 shRNA Plasmid (h): sc-36010-SH, Na⁺/K⁺-ATPase α1 shRNA Plasmid (m): sc-36011-SH, Na⁺/K⁺-ATPase α1 shRNA (h) Lentiviral Particles: sc-36010-V and Na⁺/K⁺-ATPase α1 shRNA (m) Lentiviral Particles: sc-36011-V.

Molecular Weight of Na⁺/K⁺-ATPase α1: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A2058 whole cell lysate: sc-364178 or Neuro-2A whole cell lysate: sc-364185.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

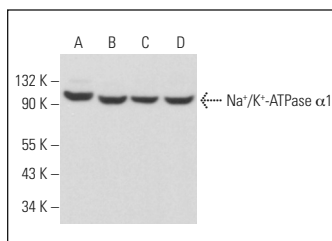
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

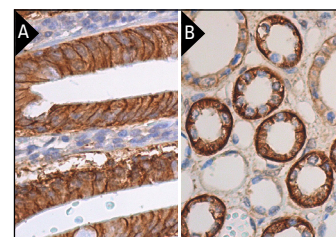
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Na⁺/K⁺-ATPase α1 (0.T.1): sc-71638. Western blot analysis of Na⁺/K⁺-ATPase α1 expression in HeLa (A), A2058 (B), TK-1 (C) and Neuro-2A (D) whole cell lysates.



Na⁺/K⁺-ATPase α1 (0.T.1): sc-71638. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing membrane and cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- Ding, C., et al. 2011. Na⁺/K⁺-ATPase in the lacrimal glands of rabbits and its changes during induced autoimmune dacryoadenitis. *Mol. Vis.* 17: 2368-2379.
- Huang, J., et al. 2013. Na⁺/K⁺-ATPase expression changes in the rabbit lacrimal glands during pregnancy. *Curr. Eye Res.* 38: 18-26.
- Lee, S.J., et al. 2015. Na,K-ATPase β1-subunit is a target of Sonic hedgehog signaling and enhances medulloblastoma tumorigenicity. *Mol. Cancer* 14: 159.
- Peh, G.S.L., et al. 2017. Regulatory compliant tissue-engineered human corneal endothelial grafts restore corneal function of rabbits with bullous keratopathy. *Sci. Rep.* 7: 14149.
- Gao, J., et al. 2018. Disruption of the lens circulation causes calcium accumulation and precipitates in connexin mutant mice. *Am. J. Physiol. Cell Physiol.* 314: C492-C503.
- Li, W., et al. 2019. Fucoidan inhibits epithelial-to-mesenchymal transition via regulation of the HIF-1α pathway in mammary cancer cells under hypoxia. *Oncol. Lett.* 18: 330-338.
- Bhat, O.M., et al. 2020. Arterial medial calcification through enhanced small extracellular vesicle release in smooth muscle-specific Asah1 gene knockout mice. *Sci. Rep.* 10: 1645.
- Li, K., et al. 2021. Reduced intracellular chloride concentration impairs angiogenesis by inhibiting oxidative stress-mediated VEGFR2 activation. *Acta Pharmacol. Sin.* 42: 560-572.



See **Na⁺/K⁺-ATPase α1 (C464.6): sc-21712** for Na⁺/K⁺-ATPase α1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.