

Na⁺/K⁺-ATPase β1 (H-115): sc-25709

BACKGROUND

The ubiquitously expressed sodium/potassium-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, sodium/potassium-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 sodium/potassium-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 sodium/potassium ATPase for ATP. The β subunit, but not the γ subunit, is essential for normal activity of sodium/potassium ATPase.

REFERENCES

- Hardwicke, P.M., et al. 1981. A proteolipid associated with Na⁺/K⁺-ATPase is not essential for ATPase activity. *Biochem. Biophys. Res. Commun.* 102: 250-257.
- Ackermann, U., et al. 1990. Mutual dependence of Na⁺/K⁺-ATPase α and β subunits for correct post-translational processing and intracellular transport. *FEBS Lett.* 269: 105-108.
- McDonough, A.A., et al. 1990. The sodium pump needs its β subunit. *FASEB J.* 4: 1598-1605.
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- Mercer, R.W., et al. 1993. Molecular cloning and immunological characterization of the γ-polypeptide, a small protein associated with Na⁺/K⁺-ATPase. *J. Cell Biol.* 121: 579-586.
- DeTomaso, A.W., et al. 1993. Expression, targeting, and assembly of functional Na⁺/K⁺-ATPase polypeptides in baculovirus-infected insect cells. *J. Biol. Chem.* 268: 1470-1478.
- Scheiner-Bobis, G., et al. 1994. Subunit requirements for expression of functional sodium pumps in yeast cells. *Biochim. Biophys. Acta* 1193: 226-234.

CHROMOSOMAL LOCATION

Genetic locus: ATP1B1 (human) mapping to 1q24.2; Atp1b1 (mouse) mapping to 1 H2.2.

SOURCE

Na⁺/K⁺-ATPase β1 (H-115) is a rabbit polyclonal antibody raised against amino acids 41-155 of Na⁺/K⁺-ATPase β1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Na⁺/K⁺-ATPase β1 (H-115) is recommended for detection of Na⁺/K⁺-ATPase β1 of mouse, rat and human 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, immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

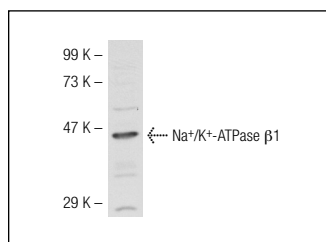
Na⁺/K⁺-ATPase β1 (H-115) is also recommended for detection of Na⁺/K⁺-ATPase β1 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Na⁺/K⁺-ATPase β1 siRNA (h): sc-36008, Na⁺/K⁺-ATPase β1 siRNA (m): sc-36009, Na⁺/K⁺-ATPase β1 shRNA Plasmid (h): sc-36008-SH, Na⁺/K⁺-ATPase β1 shRNA Plasmid (m): sc-36009-SH, Na⁺/K⁺-ATPase β1 shRNA (h) Lentiviral Particles: sc-36008-V and Na⁺/K⁺-ATPase β1 shRNA (m) Lentiviral Particles: sc-36009-V.

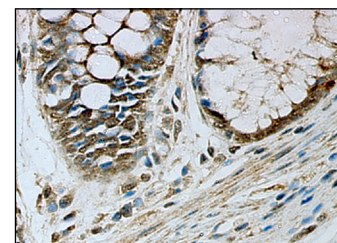
Molecular Weight of Na⁺/K⁺-ATPase β1: 40-60 kDa.

Positive Controls: mouse brain extract: sc-2253, Caki-1 cell lysate sc-2224 or rat brain extract: sc-2392.

DATA



Na⁺/K⁺-ATPase β1 (H-115): sc-25709. Western blot analysis of Na⁺/K⁺-ATPase β1 expression in Caki-1 whole cell lysate.



Na⁺/K⁺-ATPase β1 (H-115): sc-25709. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tumor showing membrane localization.

SELECT PRODUCT CITATIONS

- Suñé, G., et al. 2010. Cyclophilin B interacts with sodium-potassium ATPase and is required for pump activity in proximal tubule cells of the kidney. *PLoS ONE* 5: e13930.

STORAGE

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

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **Na⁺/K⁺-ATPase β1 (E-4): sc-376406** or **Na⁺/K⁺-ATPase β1 (3C115): sc-71635**, our highly recommended monoclonal alternatives to Na⁺/K⁺-ATPase β1 (H-115).