

Na⁺/K⁺-ATPase β1 (N-19): sc-16053

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

1. 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.
2. 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.
3. McDonough, A.A., et al. 1990. The sodium pump needs its β subunit. *FASEB J.* 4: 1598-1605.
4. Pedemonte, C.H., et al. 1990. Chemical modification as an approach to elucidation of sodium pump structure-function relations. *Am. J. Physiol.* 258: C1-C23.

CHROMOSOMAL LOCATION

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

SOURCE

Na⁺/K⁺-ATPase β1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus 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.

Blocking peptide available for competition studies, sc-16053 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

Na⁺/K⁺-ATPase β1 (N-19) 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

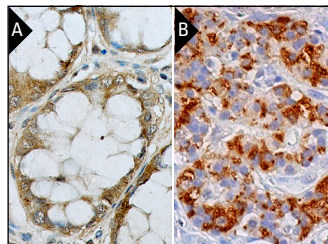
Na⁺/K⁺-ATPase β1 (N-19) is also recommended for detection of Na⁺/K⁺-ATPase β1 in additional species, including equine, canine, bovine and porcine.

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

DATA



Na⁺/K⁺-ATPase β1 (N-19): sc-16053. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tumor showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islet of Langerhans (B).

SELECT PRODUCT CITATIONS

1. Zhou, M., et al. 2005. ATP-sensitive K⁺-channel subunits on the mitochondria and endoplasmic reticulum of rat cardiomyocytes. *J. Histochem. Cytochem.* 53: 1491-1500.
2. Zhou, M., et al. 2007. Localization of sulfonylurea receptor subunits, SUR2A and SUR2B, in rat heart. *J. Histochem. Cytochem.* 55: 795-804.
3. Tatalovic, M., et al. 2012. Expression of the P/Q (Cav2.1) calcium channel in nodose sensory neurons and arterial baroreceptors. *Neurosci. Lett.* 520: 38-42.


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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 (N-19).