

p-Na⁺/K⁺-ATPase α 1 (Ser 16): sc-109465

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 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. The α subunit is subject to phosphorylation in select serine residues.

REFERENCES

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3. McDonough, A.A., et al. 1990. The sodium pump needs its β subunit. *FASEB J.* 4: 1598-1605.
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5. 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.
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CHROMOSOMAL LOCATION

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

SOURCE

p-Na⁺/K⁺-ATPase α 1 (Ser 16) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 16 phosphorylated Na⁺/K⁺-ATPase α 1 of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68693 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Na⁺/K⁺-ATPase α 1 (Ser 16) is recommended for detection of Ser 16 phosphorylated p-Na⁺/K⁺-ATPase α 1 of mouse, rat, human and ovine origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Na⁺/K⁺-ATPase α 1 (Ser 16) is also recommended for detection of correspondingly phosphorylated Na⁺/K⁺-ATPase α 1 in additional species, including bovine and porcine.

Suitable for use as control antibody for Na⁺/K⁺-ATPase α 1 siRNA (h): sc-36010, Na⁺/K⁺-ATPase α 1 siRNA (m): sc-36011, Na⁺/K⁺-ATPase α 1 shRNA Plasmid (h): sc-36010-SH, Na⁺/K⁺-ATPase α 1 shRNA Plasmid (m): sc-36011-SH, Na⁺/K⁺-ATPase α 1 shRNA (h) Lentiviral Particles: sc-36010-V and Na⁺/K⁺-ATPase α 1 shRNA (m) Lentiviral Particles: sc-36011-V.

Molecular Weight of p-Na⁺/K⁺-ATPase α 1: 100 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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