

# p-Na<sup>+</sup>/K<sup>+</sup>-ATPase $\alpha$ (Ser 23): sc-16711

## 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<sup>+</sup> ions and two K<sup>+</sup> ions against their respective electrochemical gradients. As a member of the P-type family of ion motives, Na<sup>+</sup>/K<sup>+</sup>-ATPase plays a critical role in maintaining cellular volume, resting membrane potential and Na<sup>+</sup>-coupled solute transport. Multiple isoforms of three subunits,  $\alpha$ ,  $\beta$  and  $\gamma$ , comprise to form the Na<sup>+</sup>/K<sup>+</sup>-ATPase oligomer. The 113 kDa  $\alpha$  subunit contains the binding sites for ATP and the cations. With a molecular weight between 40 and 60 kDa, the glycosylated  $\beta$  subunit ensures correct folding and membrane insertion of the  $\alpha$  subunits. The small 6 kDa  $\gamma$  subunit co-localizes with the  $\alpha$  subunit in nephron segments where it increases the affinity of Na<sup>+</sup>/K<sup>+</sup>-ATPase for ATP. The  $\beta$  subunit, but not the  $\gamma$  subunit, is essential for normal activity of Na<sup>+</sup>/K<sup>+</sup>-ATPase.

## REFERENCES

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## CHROMOSOMAL LOCATION

Genetic locus: Atp1a1 (rat) mapping to 2q34.

## SOURCE

Na<sup>+</sup>/K<sup>+</sup>-ATPase  $\alpha$  (Ser 23) is available as either goat (sc-16710) or rabbit (sc-16710-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 23 of Na<sup>+</sup>/K<sup>+</sup>-ATPase  $\alpha$  of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16711 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Na<sup>+</sup>/K<sup>+</sup>-ATPase  $\alpha$  (Ser 23) is recommended for detection of Ser 23 phosphorylated Na<sup>+</sup>/K<sup>+</sup>-ATPase  $\alpha$  of rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of p-Na<sup>+</sup>/K<sup>+</sup>-ATPase  $\alpha$ : 113 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-16710): use donkey anti-goat IgG-HRP: sc-2020 (range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (range: 1:2000-1:5000), for rabbit primary antibody (sc-16710-R): use goat anti-rabbit IgG-HRP: sc-2004 (range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: for goat primary antibody (sc-16710): use donkey anti-goat IgG-FITC: sc-2024 (range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (range: 1:100-1:400), for rabbit primary antibody (sc-16710-R): use goat anti-rabbit IgG-FITC: sc-2012 (range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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](http://www.scbt.com) or our catalog for detailed protocols and support products.