

Na⁺/K⁺-ATPase α3 (G-6): sc-376967

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.

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.

CHROMOSOMAL LOCATION

Genetic locus: ATP1A3 (human) mapping to 19q13.2; Atp1a3 (mouse) mapping to 7 A3.

SOURCE

Na⁺/K⁺-ATPase α3 (G-6) is a mouse monoclonal antibody raised against amino acids 1-65 mapping at the N-terminus of Na⁺/K⁺-ATPase α3 of human 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 α3 (G-6) is recommended for detection of Na⁺/K⁺-ATPase α3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Na⁺/K⁺-ATPase α3 siRNA (h): sc-36012, Na⁺/K⁺-ATPase α3 siRNA (m): sc-36013, Na⁺/K⁺-ATPase α3 shRNA Plasmid (h): sc-36012-SH, Na⁺/K⁺-ATPase α3 shRNA Plasmid (m): sc-36013-SH, Na⁺/K⁺-ATPase α3 shRNA (h) Lentiviral Particles: sc-36012-V and Na⁺/K⁺-ATPase α3 shRNA (m) Lentiviral Particles: sc-36013-V.

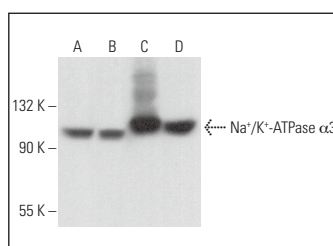
Molecular Weight of Na⁺/K⁺-ATPase α3: 113 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, NIH/3T3 whole cell lysate: sc-2210 or RAW 264.7 whole cell lysate: sc-2211.

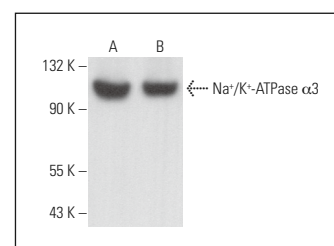
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Na⁺/K⁺-ATPase α3 (G-6): sc-376967. Western blot analysis of Na⁺/K⁺-ATPase α3 expression in THP-1 (A), NIH/3T3 (B), RAW 264.7 (C) and SH-SY5Y (D) whole cell lysates.



Na⁺/K⁺-ATPase α3 (G-6): sc-376967. Western blot analysis of Na⁺/K⁺-ATPase α3 expression in K-562 (A) and F9 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Yue, Q., et al. 2016. Proteasome inhibition contributed to the cytotoxicity of arenobufagin after its binding with Na, K-ATPase in human cervical carcinoma HeLa cells. *PLoS ONE* 11: e0159034.
- Sun, H.J., et al. 2023. DR region of NKAα1 is a target to ameliorate hepatic lipid metabolism disturbance in obese mice. *Metabolism* 145: 155579.

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 for detailed protocols and support products.



See **Na⁺/K⁺-ATPase α (M7-PB-E9): sc-58628** for Na⁺/K⁺-ATPase α antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.