SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+/K^+-ATPase α3 (XVIF9-G10): sc-58631

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 to form 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.

CHROMOSOMAL LOCATION

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

SOURCE

Na^+/K^+-ATPase α3 (XVIF9-G10) is a mouse monoclonal antibody raised against cardiac microsomes of canine origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Na^+/K^+-ATPase α3 (XVIF9-G10) is recommended for detection of Na^+/K^+-ATPase α3 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Na^+/K^+-ATPase α3 (XVIF9-G10) is also recommended for detection of Na^+/K^+-ATPase α3 in additional species, including canine.

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.

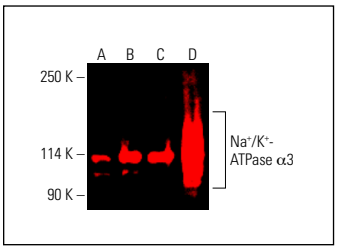
Molecular Weight of Na^+/K^+-ATPase α3: 113 kDa.

Positive Conrols: THP-1 cell lysate: sc-2238, K-562 whole cell lysate: sc-2203 or Y79 cell lysate: sc-2240.

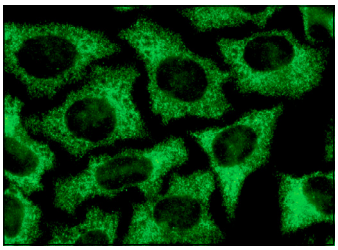
RESEARCH USE

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

DATA



Na^+/K^+-ATPase α3 (XVIF9-G10): sc-58631. Near-Infrared western blot analysis of Na^+/K^+-ATPase α3 expression in THP-1 (**A**), Y79 (**B**), K-562 (**C**) and Daudi (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 790: sc-533666.



Na^+/K^+-ATPase α3 (XVIF9-G10): sc-58631. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Kapri-Pardes, E., et al. 2011. Stabilization of the α2 isoform of Na,K-ATPase by mutations in a phospholipid binding pocket. J. Biol. Chem. 286: 42888-42899.
2. Papadakis, M., et al. 2013. Tsc1 (hamartin) confers neuroprotection against ischemia by inducing autophagy. Nat. Med. 19: 351-357.
3. Stanley, C.M., et al. 2015. Importance of the voltage dependence of cardiac Na/K ATPase isozymes. Biophys. J. 109: 1852-1862.
4. Shi, M., et al. 2018. DR-region of Na^+/K^+ ATPase is a target to treat excitotoxicity and stroke. Cell Death Dis. 10: 6.
5. Matsuura, K., et al. 2022. SIPA1L1/SPAR1 interacts with the neurabin family of proteins and is involved in GPCR signaling. J. Neurosci. 42: 2448-2473.
6. Katoh, M., et al. 2024. Negative regulation of thyroid adenoma-associated protein (THADA) in the cardiac glycoside-induced anti-cancer effect. J. Physiol. Sci. 74: 23.

PROTOCOLS

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

CONJUGATES

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.