SANTA CRUZ BIOTECHNOLOGY, INC.

αENaC (H-6): sc-518119

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The epithelial sodium channel (ENaC) is a member of the ENaC/DEG superfamily that is located on the apical surface of cells. ENaC mediates sodium reabsorption in kidney, distal colon, lung, ducts of exocrine glands, and other organs. ENaC is formed by heteromultimerization of four homologous subunits, α, β, γ and δ. The most frequently formed heterotetramer consists of two α, one β, and one γ subunit, but the α subunit can be replaced by a δ subunit. The αENaC gene maps to human chromosome 12p13. Both the β and γENaC genes map to human chromosome 16p12, and the γENaC transcript is detected as a glycosylated protein. The carboxy terminus of all ENaC subunits contains PY motifs, which interact with the ubiquitin protein ligase, Nedd4, to regulate intracellular sodium concentrations. Gain-of-function mutations involving the PY motif cause Liddle's syndrome, an autosomal dominant form of hypertension, resulting from excessive renal sodium absorption. Conversely, ENaC loss-of-function mutations result in pseudohypoaldosteronism type I, a disorder characterized by salt wasting and hypotension.

REFERENCES

1. McDonald, F.J., et al. 1994. Cloning, expression, and tissue distribution of a human amiloride-sensitive Na^+ channel. Am. J. Physiol. 266: L728-L734.
2. Voilley, N., et al. 1995. Cloning, chromosomal localization, and physical linkage of the β and γ subunits (SCNN1B and SCNN1G) of the human epithelial amiloride-sensitive sodium channel. Genomics 28: 560-565.
3. Ludwig, M., et al. 1998. Structural organisation of the gene encoding the α-subunit of the human amiloride-sensitive epithelial sodium channel. Hum. Genet. 102: 576-581.
4. Masilamani, S., Kim, G.H., Mitchell, C., Wade, J.B., and Knepper, M.A. 1999. Aldosterone-mediated regulation of ENaC α, β, and γ subunit proteins in rat kidney. J. Clin. Invest. 104: R19-R23.
5. Brockway, L.M., et al. 2002. Rabbit retinal neurons and glia express a variety of ENaC/DEG subunits. Am. J. Physiol. Cell Physiol. 283: C126-C134.

CHROMOSOMAL LOCATION

Genetic locus: SCNN1A (human) mapping to 12p13.31.

SOURCE

αENaC (H-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 206-229 of αENaC of human 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.

αENaC (H-6) is available conjugated to agarose (sc-518119 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518119 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518119 PE), fluorescein (sc-518119 FITC), Alexa Fluor® 488 (sc-518119 AF488), Alexa Fluor® 546 (sc-518119 AF546), Alexa Fluor® 594 (sc-518119 AF594) or Alexa Fluor® 647 (sc-518119 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518119 AF680) or Alexa Fluor® 790 (sc-518119 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

αENaC (H-6) is recommended for detection of αENaC of 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 αENaC siRNA (h): sc-42404, αENaC shRNA Plasmid (h): sc-42404-SH and αENaC shRNA (h) Lentiviral Particles: sc-42404-V.

Molecular Weight (predicted) of αENaC isoforms 1/2/3: 76/82/28 kDa.

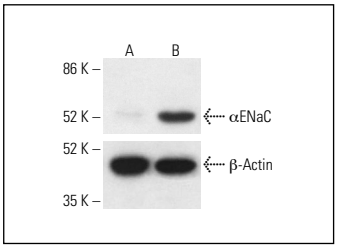
Molecular Weight (predicted) of αENaC isoforms 4/5: 74/78 kDa.

Molecular Weight (observed) of αENaC: 60/80 kDa.

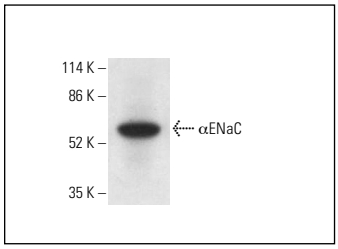
RECOMMENDED SUPPORT REAGENTS

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



αENaC (H-6): sc-518119. Western blot analysis of αENaC expression in untreated (**A**) and chemically-treated (**B**) SP2/0 whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



αENaC (H-6): sc-518119. Western blot analysis of αENaC expression in NIH/3T3 whole cell lysate. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

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.