SANTA CRUZ BIOTECHNOLOGY, INC.

βENaC (E-10): sc-48428

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 12p13.31, and expresses a glycosylated protein. Both the β and γENaC genes map to human chromosome 16p12.2, 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.

CHROMOSOMAL LOCATION

Genetic locus: SCNN1B (human) mapping to 16p12.2; Scnn1b (mouse) mapping to 7 F2.

SOURCE

βENaC (E-10) is a mouse monoclonal antibody raised against amino acids 271-460 of βENaC 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.

βENaC (E-10) is available conjugated to agarose (sc-48428 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48428 PE), fluorescein (sc-48428 FITC), Alexa Fluor® 488 (sc-48428 AF488), Alexa Fluor® 546 (sc-48428 AF546), Alexa Fluor® 594 (sc-48428 AF594) or Alexa Fluor® 647 (sc-48428 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48428 AF680) or Alexa Fluor® 790 (sc-48428 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

βENaC (E-10) is recommended for detection of βENaC 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

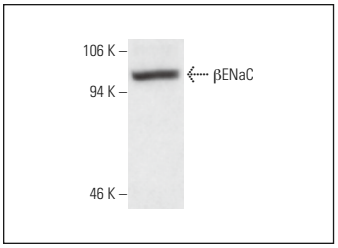
Suitable for use as control antibody for βENaC siRNA (h): sc-42417, βENaC siRNA (m): sc-42418, βENaC shRNA Plasmid (h): sc-42417-SH, βENaC shRNA Plasmid (m): sc-42418-SH, βENaC shRNA (h) Lentiviral Particles: sc-42417-V and βENaC shRNA (m) Lentiviral Particles: sc-42418-V.

Molecular Weight (predicted) of βENaC: 73 kDa.

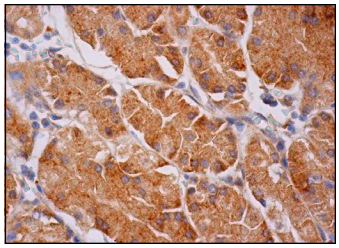
Molecular Weight (observed) of βENaC: 99 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214.

DATA



βENaC (E-10): sc-48428. Western blot analysis of βENaC expression in KNRK whole cell lysate.



βENaC (E-10: sc-48428. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Varelogianni, G., et al. 2013. Effect of ambroxol on chloride transport, CFTR and ENaC in cystic fibrosis airway epithelial cells. Cell Biol. Int. 37: 1149-1156.
2. Kobayashi, R., et al. 2017. An angiotensin II type 1 receptor binding molecule has a critical role in hypertension in a chronic kidney disease model. Kidney Int. 91: 1115-1125.
3. Polidoro, J.Z., et al. 2021. The Angiotensin II type 1 receptor-associated protein attenuates Angiotensin II-mediated inhibition of the renal outer medullary potassium channel in collecting duct cells. Front. Physiol. 12: 642409.
4. Zhang, Q., et al. 2024. Da-Chuan-Xiong Decoction ameliorates sodium sensitivity and plasma norepinephrine via attenuation of brain oxidative stress in the DOCA-salt hypertensive rats. Int. J. Hypertens. 2024: 2226143.

RESEARCH USE

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