

β ENaC (D-3): sc-25354

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 α ENaC gene maps to human chromosome 12p13, and expresses a glycosylated protein. Both the β and γ ENaC genes map to human chromosome 16p12.2, and the γ ENaC 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

- McDonald, F.J., et al. 1994. Cloning, expression, and tissue distribution of a human amiloride-sensitive Na⁺ channel. *Am. J. Physiol.* 266: L728-L734.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

β ENaC (D-3) is a mouse monoclonal antibody raised against amino acids 271-460 of β ENaC of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β ENaC (D-3) is available conjugated to agarose (sc-25354 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25354 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25354 PE), fluorescein (sc-25354 FITC), Alexa Fluor[®] 488 (sc-25354 AF488), Alexa Fluor[®] 546 (sc-25354 AF546), Alexa Fluor[®] 594 (sc-25354 AF594) or Alexa Fluor[®] 647 (sc-25354 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-25354 AF680) or Alexa Fluor[®] 790 (sc-25354 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

β ENaC (D-3) is recommended for detection of β ENaC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

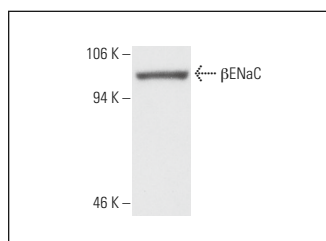
Suitable for use as control antibody for β ENaC siRNA (h): sc-42417, β ENaC siRNA (m): sc-42418, β ENaC shRNA Plasmid (h): sc-42417-SH, β ENaC shRNA Plasmid (m): sc-42418-SH, β ENaC shRNA (h) Lentiviral Particles: sc-42417-V and β ENaC shRNA (m) Lentiviral Particles: sc-42418-V.

Molecular Weight (predicted) of β ENaC: 73 kDa.

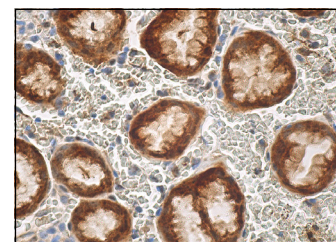
Molecular Weight (observed) of β ENaC: 99 kDa.

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

DATA



β ENaC (D-3): sc-25354. Western blot analysis of β ENaC expression in KNRK whole cell lysate.



β ENaC (D-3): sc-25354. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Liang, X., et al. 2010. AS160 modulates aldosterone-stimulated epithelial sodium channel forward trafficking. *Mol. Biol. Cell* 21: 2024-2033.
- Loh, S.Y., et al. 2016. Sub-chronic testosterone treatment increases the levels of epithelial sodium channel (ENaC)- α , β and γ in the kidney of orchidectomized adult male Sprague-Dawley rats. *PeerJ* 4: e2145.
- Loh, S.Y., et al. 2017. Changes in plasma aldosterone and electrolytes levels, kidney epithelial sodium channel (ENaC) and blood pressure in normotensive WKY and hypertensive SHR rats following gonadectomy and chronic testosterone treatment. *Steroids* 128: 128-135.
- Brand, J.D., et al. 2018. Influenza-mediated reduction of lung epithelial ion channel activity leads to dysregulated pulmonary fluid homeostasis. *JCI Insight* 3: e123467.

STORAGE

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

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