

δENaC (H-230): sc-21015

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 organization of the gene encoding the α -subunit of the human amiloride-sensitive epithelial sodium channel. *Hum. Genet.* 102: 576-581.
- Masilamani, S., et al. 1999. Aldosterone-mediated regulation of ENaC α , β and γ subunit proteins in rat kidney. *J. Clin. Invest.* 104: R19-R23.
- Hanwell, D., et al. 2002. Trafficking and cell surface stability of the epithelial Na⁺ channel expressed in epithelial Madin-Darby canine kidney cells. *J. Biol. Chem.* 277: 9772-9779.

CHROMOSOMAL LOCATION

Genetic locus: SCNN1D (human) mapping to 1p36.33.

SOURCE

δENaC (H-230) is a rabbit polyclonal antibody raised against amino acids 81-310 mapping near the N-terminus of δENaC of human origin.

PRODUCT

Each vial contains 200 µg IgG 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.

RESEARCH USE

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

APPLICATIONS

δENaC (H-230) is recommended for detection of δENaC of 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 δENaC siRNA (h): sc-42421, δENaC shRNA Plasmid (h): sc-42421-SH and δENaC shRNA (h) Lentiviral Particles: sc-42421-V.

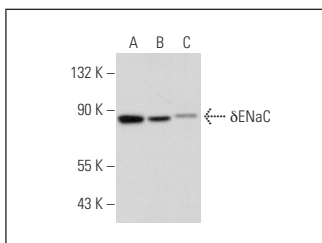
Molecular Weight of δENaC: 110 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, MIA PaCa-2 cell lysate: sc-2285 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

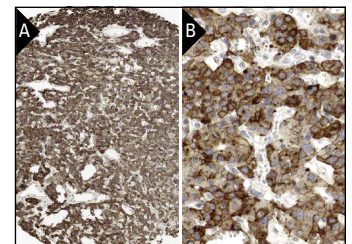
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



δENaC (H-230): sc-21015. Western blot analysis of δENaC expression in PANC-1 (A), HEK293 (B) and MCF7 (C) whole cell lysates.



δENaC (H-230): sc-21015. Immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing membrane and cytoplasmic staining of glandular cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Kapoor, N., et al. 2009. Knockdown of ASIC1 and epithelial sodium channel subunits inhibits glioblastoma whole cell current and cell migration. *J. Biol. Chem.* 284: 24526-24541.
- Bangel-Ruland, N., et al. 2010. Characterization of the epithelial sodium channel δ -subunit in human nasal epithelium. *Am. J. Respir. Cell Mol. Biol.* 42: 498-505.