

γ ENaC (F-20): sc-22245



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 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: SCNN1G (human) mapping to 16p12.2; Scnn1g (mouse) mapping to 7 F2.

SOURCE

γ ENaC (F-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of γ ENaC of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-22245 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

γ ENaC (F-20) is recommended for detection of γ ENaC of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

γ ENaC (F-20) is also recommended for detection of γ ENaC in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for γ ENaC siRNA (h): sc-42419, γ ENaC siRNA (m): sc-42420, γ ENaC shRNA Plasmid (h): sc-42419-SH, γ ENaC shRNA Plasmid (m): sc-42420-SH, γ ENaC shRNA (h) Lentiviral Particles: sc-42419-V and γ ENaC shRNA (m) Lentiviral Particles: sc-42420-V.

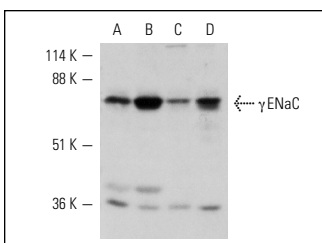
Molecular Weight of γ ENaC: 85 kDa.

Positive Controls: A549 cell lysate: sc-2413, Caki-1 cell lysate: sc-2224 or COLO 320DM cell lysate: sc-2226.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



γ ENaC (F-20): sc-22245. Western blot analysis of γ ENaC expression in A549 (A), Caki-1 (B), NCI-H1688 (C) and COLO 320DM (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Hara, S., et al. 2010. The effect of topical amiloride eye drops on tear quantity in rabbits. *Mol. Vis.* 16: 2279-2285.
- Perlewitz, A., et al. 2010. Aldosterone and vasopressin affect α - and γ -ENaC mRNA translation. *Nucleic Acids Res.* 38: 5746-5760.

RESEARCH USE

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