SANTA CRUZ BIOTECHNOLOGY, INC.

SLC4A4 (1G2): sc-293338

BACKGROUND

SLC4A4 (solute carrier family 4, sodium bicarbonate cotransporter, member 4), also known as KNBC, NBC1, NBC2, pNBC, HNBC1, hhNMC or SLC4A5, is a 1,079 amino acid multi-pass membrane protein that belongs to the anion exchanger family. SLC4A4 is an electrogenic sodium/bicarbonate cotransporter that may participate in the regulation of bicarbonate influx/efflux at the basolateral membrane of cells. Inhibited by stilbene derivatives and controlled by cyclic AMP, SLC4A4 is a key player in regulating intracellular pH in several cell types. Defects in the gene encoding SLC4A4 are the cause of proximal renal tubular acidosis with ocular abnormalities (also known as renal tubular acidosis II) and is characterized by short stature, profound pRTA (proximal renal tubular acidosis), mental retardation, bilateral glaucoma, cataracts and bandkeratopathy. SLC4A4 exists as four alternatively spliced isoforms.

REFERENCES

1. Igarashi, T., et al. 1999. Mutations in SLC4A4 cause permanent isolated proximal renal tubular acidosis with ocular abnormalities. Nat. Genet. 23: 264-266.
2. Yamada, H., et al. 2003. Localization of NBC-1 variants in human kidney and renal cell carcinoma. Biochem. Biophys. Res. Commun. 310: 1213-1218.
3. Sun, X.C. and Bonanno, J.A. 2003. Identification and cloning of the Na/HCO cotransporter (NBC) in human corneal endothelium. Exp. Eye Res. 77: 287-295.
4. Dinour, D., et al. 2004. A novel missense mutation in the sodium bicarbonate cotransporter (NBCe1/SLC4A4) causes proximal tubular acidosis and glaucoma through ion transport defects. J. Biol. Chem. 279: 52238-52246.
5. Pushkin, A., et al. 2004. Molecular mechanism of kNBC1-carbonic anhydrase II interaction in proximal tubule cells. J. Physiol. 559: 55-65.
6. Li, H.C., et al. 2005. Missense mutations in Na^+:HCO_3^- cotransporter NBC1 show abnormal trafficking in polarized kidney cells: a basis of proximal renal tubular acidosis. Am. J. Physiol. Renal Physiol. 289: F61-F71.
7. Horita, S., et al. 2005. Functional analysis of NBC1 mutants associated with proximal renal tubular acidosis and ocular abnormalities. J. Am. Soc. Nephrol. 16: 2270-2278.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A4 (human) mapping to 4q13.3; Slc4a4 (mouse) mapping to 5 E1.

SOURCE

SLC4A4 (1G2) is a mouse monoclonal antibody raised against amino acids 1-646 of SLC4A4 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SLC4A4 (1G2) is recommended for detection of SLC4A4 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SLC4A4 siRNA (h): sc-89292, SLC4A4 siRNA (m): sc-153568, SLC4A4 shRNA Plasmid (h): sc-89292-SH, SLC4A4 shRNA Plasmid (m): sc-153568-SH, SLC4A4 shRNA (h) Lentiviral Particles: sc-89292-V and SLC4A4 shRNA (m) Lentiviral Particles: sc-153568-V.

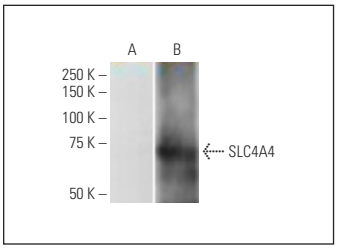
Molecular Weight of SLC4A4: 130 kDa.

Positive Controls: SLC4A4 transfected 293T whole cell lysate.

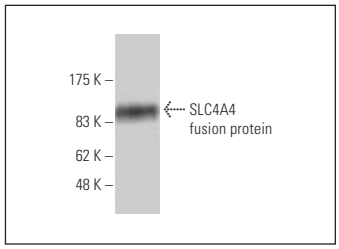
RECOMMENDED SUPPORT REAGENTS

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).

DATA



SLC4A4 (1G2): sc-293338. Western blot analysis of SLC4A4 expression in non-transfected (**A**) and SLC4A4 transfected (**B**) 293T whole cell lysates.



SLC4A4 (1G2): sc-293338. Western blot analysis of human recombinant SLC4A4 fusion protein.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.