

SLC4A7 (F-15): sc-99632

BACKGROUND

SLC4A7 (solute carrier family 4 member 7), also known as sodium bicarbonate cotransporter 3, is a 1,214 amino acid multi-pass membrane protein that mediates the movement of sodium and bicarbonate across the cell membrane. Studies in mice have shown that hydrogen ion disposal mediated by SLC4A7 is essential for auditory and visual systems, therefore, defects in the gene encoding SLC4A7 may result in the human manifestation of Usher syndrome, a leading cause of deafblindness. With highest expression in spleen and testis, SLC4A7 is also expressed in a variety of other tissues, including brain, skeletal muscle and heart. Due to its critical role in intracellular pH regulation, SLC4A7 is notably affected by hypoxic states during which protein levels are decreased, presumably for reduction of energy consumption. There are five isoforms of SLC4A7 that exist as a result of alternative splicing events.

REFERENCES

- Amlal, H., et al. 1999. Characterization of Na⁺/HCO₃⁻ cotransporter isoform NBC3. *Am. J. Physiol.* 276: F903-F913.
- Hmani, M., et al. 1999. A novel locus for Usher syndrome type II, USH2B, maps to chromosome 3 at p23-24.2. *Eur. J. Hum. Genet.* 7: 363-367.
- Pushkin, A., et al. 1999. Mapping of the human NBC3 (SLC4A7) gene to chromosome 3p22. *Genomics* 57: 321-322.
- Pushkin, A., et al. 1999. Cloning, tissue distribution, genomic organization, and functional characterization of NBC3, a new member of the sodium bicarbonate cotransporter family. *J. Biol. Chem.* 274: 16569-16575.
- Soleimani, M. and Burnham, C.E. 2000. Physiologic and molecular aspects of the Na⁺:HCO₃⁻ cotransporter in health and disease processes. *Kidney Int.* 57: 371-384.
- Choi, I., et al. 2000. An electroneutral sodium/bicarbonate cotransporter NBCn1 and associated sodium channel. *Nature* 405: 571-575.
- Bok, D., et al. 2003. Blindness and auditory impairment caused by loss of the sodium bicarbonate cotransporter NBC3. *Nat. Genet.* 34: 313-319.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A7 (human) mapping to 3p24.1.

SOURCE

SLC4A7 (F-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of SLC4A7 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-99632 P, (100 µg 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

SLC4A7 (F-15) is recommended for detection of SLC4A7 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other SLC family members.

Suitable for use as control antibody for SLC4A7 siRNA (h): sc-77885, SLC4A7 shRNA Plasmid (h): sc-77885-SH and SLC4A7 shRNA (h) Lentiviral Particles: sc-77885-V.

Molecular Weight of glycosylated SLC4A7: 150 kDa.

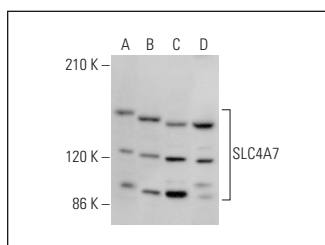
Molecular Weight of deglycosylated SLC4A7: 130 kDa.

Positive Controls: Y79 cell lysate: sc-2240, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

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.

DATA



SLC4A7 (F-15): sc-99632. Western blot analysis of SLC4A7 expression in Jurkat (A), K-562 (B), HEK293 (C) and Y79 (D) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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