SANTA CRUZ BIOTECHNOLOGY, INC.

CLC-K (H-61): sc-292791

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The family of voltage-dependent chloride channels (CLCs) regulate cellular trafficking of chloride ions, a critical component of all living cells. CLCs regulate excitability in muscle and nerve cells, aid in organic solute transport, and maintain cellular volume. CLC-KA is a kidney-specific chloride channel that mediates transepithelial chloride transport in the thin ascending limb of the Henle loop in the inner medulla. CLC-KA plays a crucial role in urine concentration. The gene encoding human CLC-KA maps to chromosome 1p36.13. Mutations in this gene may be associated with nephrogenic diabetes insipidus in those cases where mutations in the vasopressin V2 receptor and the AQP2 water channel are lacking. CLC-KB mediates basolateral chloride ion efflux in the thick ascending limb and in more distal nephron segments. The gene encoding human CLC-KB maps to chromosome 1p36.13. Mutations in this gene cause type III Barter's syndrome which is characterized by renal salt-wasting and low blood pressure.

REFERENCES

1. Saito-Ohara, F., et al. 1996. Assignment of the genes encoding the human chloride channels, CLCNKA and CLCNKB, to 1p36 and of CLCN3 to 4q32-q33 by *in situ* hybridization. Genomics 36: 372-374.
2. Simon, D.B., et al. 1997. Mutations in the chloride channel gene, CLCNKB, cause Bartter's syndrome type III. Nat. Genet. 17: 171-178.
3. Matsumura, Y., et al. 1999. Overt nephrogenic diabetes insipidus in mice lacking the CLC-K1 chloride channel. Nat. Genet. 21: 95-98.
4. Gyomorey, K., et al. 2000. Expression of the chloride channel CIC-2 in the murine small intestine epithelium. Am. J. Physiol., Cell Physiol. 279: 1787-1794.
5. Estevez, R., et al. 2001. Barttin is a Cl^- channel β-subunit crucial for renal Cl^- reabsorption and inner ear K^+ secretion. Nature 414: 558-561.

CHROMOSOMAL LOCATION

Genetic locus: CLCNKA/CLCNKB (human) mapping to 1p36.13; Clcnka/Clcnkb (mouse) mapping to 4 E1.

SOURCE

CLC-K (H-61) is a rabbit polyclonal antibody raised against amino acids 62-122 mapping near the N-terminus of CLC-KA 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.

PROTOCOLS

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

APPLICATIONS

CLC-K (H-61) is recommended for detection of CLC-KA and CLC-KB 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)], 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).

CLC-K (H-61) is also recommended for detection of CLC-KA and CLC-KB in additional species, including canine, bovine and porcine.

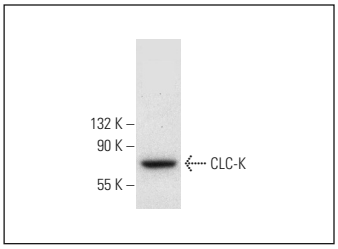
Molecular Weight of CLC-K: 63 kDa.

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

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



CLC-K (H-61): sc-292791. Western blot analysis of CLC-K expression in KNRK whole cell lysate.

RESEARCH USE

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