SANTA CRUZ BIOTECHNOLOGY, INC.

CLC-3/4/5 (H-300): sc-28762

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. The genes encoding human CLC-1 through CLC-7 map to chromosomes 7q32, 3q28, 4q32, Xp22.3, Xp11.23-p11.22, 1p36 and 16p13, respectively. CLC1 is highly expressed in skeletal muscle. Mutations in the gene encoding CLC1 lead to myotonia, an inheritable disorder characterized by muscle stiffness and renal salt wasting. CLC2 is highly expressed in the epithelia of several organs including lung, which suggests CLC2 may be a possible therapeutic target for cystic fibrosis. CLC3 expression is particularly abundant in neuronal tissue, while CLC4 expression is evident in skeletal and cardiac muscle as well as brain. Mutations in the gene encoding CLC5 lead to Dent's disease, a renal disorder characterized by proteinuria and hypercalciuria. CLC6 and CLC7 are broadly expressed in several tissues including testis, kidney, brain and muscle.

REFERENCES

1. Koch, M.C., et al. 1992. The skeletal muscle chloride channel in dominant and recessive human myotonia. Science 257: 797-800.
2. Pook, M.A., et al. 1993. Dent's disease, a renal Fanconi syndrome with nephrocalcinosis and kidney stones, is associated with a microdeletion involving DXS255 and maps to Xp11.22. Hum. Mol. Genet. 2: 2129-2134.
3. van Slegtenhorst, M.A., et al. 1994. A gene from the Xp22.3 region shares homology with voltage-gated chloride channels. Hum. Mol. Genet. 3: 547-552.
4. Brandt, S., et al. 1995. CLC-6 and CLC-7 are two novel broadly expressed members of the CLC chloride channel family. FEBS Lett. 377: 15-20.
5. Cid, L.P., et al. 1995. Cloning of a putative human voltage-gated chloride channel (CLC-2) cDNA widely expressed in human tissues. Hum. Mol. Genet. 4: 407-413.
6. Borsani, G., et al. 1995. Characterization of a human and murine gene (CLCN3) sharing similarities to voltage-gated chloride channels and to a yeast integral membrane protein. Genomics 27: 131-141.
7. Gyomorey, K., et al. 2000. Expression of the chloride channel CLC-2 in the murine small intestine epithelium. Am. J. Physiol. Cell Physiol. 279: 1787-1794.

SOURCE

CLC-3/4/5 (H-300) is a rabbit polyclonal antibody raised against amino acids 563-762 mapping at the C-terminus of CLC-3 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.

APPLICATIONS

CLC-3/4/5 (H-300) is recommended for detection of CLC-3 and, to a lesser extent CLC-4 and CLC-5 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-3/4/5 (H-300) is also recommended for detection of CLC-3 and, to a lesser extent CLC-4 and CLC-5 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of CLC-3/4/5: 85 kDa.

Positive Controls: 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.

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.