SANTA CRUZ BIOTECHNOLOGY, INC.

CLC-5 (D-17): sc-22373

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, 1p36 and 16p13, respectively. CLC-1 is highly expressed in skeletal muscle. Mutations in the gene encoding CLC-1 lead to myotonia, an inheritable disorder characterized by muscle stiffness and renal salt wasting. CLC-2 is highly expressed in the epithelia of several organs including lung, which suggests CLC-2 may be a possible therapeutic target for cystic fibrosis. CLC-3 expression is particularly abundant in neuronal tissue, while CLC-4 expression is evident in skeletal and cardiac muscle as well as brain. Mutations in the gene encoding CLC-5 lead to Dent's disease, a renal disorder characterized by proteinuria and hypercalciuria. CLC-6 and CLC-7 are broadly expressed in several tissues including testes, kidney, brain and muscle.

REFERENCES

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2. Pook, M.A., Wrong, O., Wooding, C., Norden, A.G., Feest, T.G. and Thakker, R.V. 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., Bassi, M.T., Borsani, G., Wapenaar, M.C., Ferrero, G.B., de Conciliis, L., Rugarli, E.I., Grillo, A., Franco, B., Zoghbi, H.Y. and Ballabio, A. 1994. A gene from the Xp22.3 region shares homology with voltage-gated chloride channels. Hum. Mol. Genet. 3: 547-552.
4. Borsani, G., Rugarli, E.I., Taglialatela, M., Wong, C. and Ballabio, A. 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.
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6. Cid, L.P., Montrose-Rafizadeh, C., Smith, D.I., Guggino, W.B. and Cutting, G.R. 1995. Cloning of a putative human voltage-gated chloride channel (CLC-2) cDNA widely expressed in human tissues. Hum. Mol. Genet. 4: 407-413.
7. Gyömörey, K., Yeger, H., Ackerley, C., Garami, E. and Bear, C.E. 2000. Expression of the chloride channel CLC-2 in the murine small intestine epithelium. Am. J. Physiol., Cell Physiol. 279: C1787-C1794.

CHROMOSOMAL LOCATION

Genetic locus: CLCN5 (human) mapping to Xp11.23; Clcn5 (mouse) mapping to X A1.1.

SOURCE

CLC-5 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CLC-5 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.

Blocking peptide available for competition studies, sc-22373 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CLC-5 (D-17) is recommended for detection of CLC-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-5 (D-17) is also recommended for detection of CLC-5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CLC-5 siRNA (h): sc-42385, CLC-5 siRNA (m): sc-42386, CLC-5 shRNA Plasmid (h): sc-42385-SH, CLC-5 shRNA Plasmid (m): sc-42386-SH, CLC-5 shRNA (h) Lentiviral Particles: sc-42385-V and CLC-5 shRNA (m) Lentiviral Particles: sc-42386-V.

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) 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.

SELECT PRODUCT CITATIONS

1. McMains, E., Krishnan, V., Prasad, S. and Gleason, E. 2011. Expression and localization of CLC chloride transport proteins in the avian retina. PLoS ONE 6: e17647.

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 or our catalog for detailed protocols and support products.