

CLC-2 (YY9): sc-81871

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. 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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- 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.
- 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.
- 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.
- 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.
- Gyomory, 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.

CHROMOSOMAL LOCATION

Genetic locus: CLCN2 (human) mapping to 3q27.1.

SOURCE

CLC-2 (YY9) is a mouse monoclonal antibody raised against recombinant CLC-2 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CLC-2 (YY9) is recommended for detection of CLC-2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CLC-2 siRNA (h): sc-42379, CLC-2 shRNA Plasmid (h): sc-42379-SH and CLC-2 shRNA (h) Lentiviral Particles: sc-42379-V.

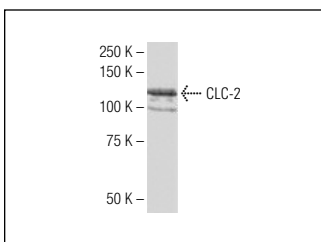
Molecular Weight of CLC-2: 98 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

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, 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).

DATA



CLC-2 (YY9): sc-81871. Western blot analysis of CLC-2 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

- Wang, H.W. and Zheng, Y.J. 2013. Effect of CLC-2 on the cytoskeleton in human trabecular meshwork cells. *Mol. Med. Rep.* 8: 1099-1105.

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.