

CLC-2 (D-6): sc-377284

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-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 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.

CHROMOSOMAL LOCATION

Genetic locus: CLCN2 (human) mapping to 3q27.1; Clcn2 (mouse) mapping to 16 B1.

SOURCE

CLC-2 (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 859-897 near the C-terminus of CLC-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CLC-2 (D-6) is available conjugated to agarose (sc-377284 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377284 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377284 PE), fluorescein (sc-377284 FITC), Alexa Fluor® 488 (sc-377284 AF488), Alexa Fluor® 546 (sc-377284 AF546), Alexa Fluor® 594 (sc-377284 AF594) or Alexa Fluor® 647 (sc-377284 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377284 AF680) or Alexa Fluor® 790 (sc-377284 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377284 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

CLC-2 (D-6) is recommended for detection of CLC-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for CLC-2 siRNA (h): sc-42379, CLC-2 siRNA (m): sc-42380, CLC-2 siRNA (r): sc-61868, CLC-2 shRNA Plasmid (h): sc-42379-SH, CLC-2 shRNA Plasmid (m): sc-42380-SH, CLC-2 shRNA Plasmid (r): sc-61868-SH, CLC-2 shRNA (h) Lentiviral Particles: sc-42379-V, CLC-2 shRNA (m) Lentiviral Particles: sc-42380-V and CLC-2 shRNA (r) Lentiviral Particles: sc-61868-V.

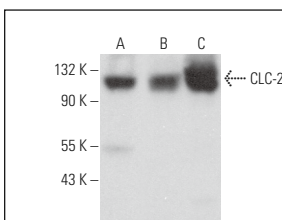
Molecular Weight of CLC-2: 98 kDa.

Positive Controls: mouse heart extract: sc-2254, U-87 MG cell lysate: sc-2411 or A-10 cell lysate: sc-3806.

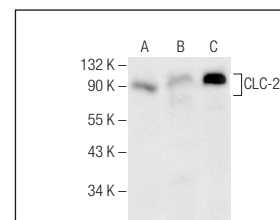
RECOMMENDED SUPPORT REAGENTS

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, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CLC-2 (D-6): sc-377284. Western blot analysis of CLC-2 expression in A-10 (A), COLO 205 (B) and PC-12 (C) whole cell lysates.



CLC-2 (D-6): sc-377284. Western blot analysis of CLC-2 expression in A-10 (A) and U-87 MG (B) whole cell lysates and mouse heart tissue extract (C).

SELECT PRODUCT CITATIONS

1. Martínez-Rojas, V.A., et al. 2021. CLC-2-like chloride current alterations in a cell model of spinal and bulbar muscular atrophy, a polyglutamine disease. *J. Mol. Neurosci.* 71: 662-674.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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