

CLIC1 (356.1): sc-81873

BACKGROUND

Chloride intracellular channel 1 (CLIC1), also referred to as NCC27, is a member of the highly conserved family of chloride ion channels that function in both soluble and integral membrane forms. CLIC1 is a monomeric protein that contains a redox-active site similar to glutaredoxin; it functions as an anion-selective channel. CLIC1 forms a dimer when oxidized and is then able to form chloride ion channels in bilayers and vesicles, whereas a reducing environment prevents this from occurring. Insulin concentration also plays a role in CLIC1 regulation, and the hormone may cause a subnuclear relocalization of CLIC1. CLIC1 is associated with macrophage activation; a downregulation of CLIC1 function prevents TNF α release induced by β -Amyloid protein (A- β) stimulation. This suggests a role for CLIC1 in several neurodegenerative processes, such as Alzheimer's disease, a syndrome characterized by an accumulation of β -Amyloid.

REFERENCES

- Harrop, S.J., et al. 2001. Crystal structure of a soluble form of the intracellular chloride ion channel CLIC1 (NCC27) at 1.4-Å resolution. *J. Biol. Chem.* 276: 44993-45000.
- Tulk, B.M., et al. 2002. CLIC1 inserts from the aqueous phase into phospholipid membranes, where it functions as an anion channel. *Am. J. Physiol., Cell Physiol.* 282: C1103-C1112.

CHROMOSOMAL LOCATION

Genetic locus: CLIC1 (human) mapping to 6p21.33; Clc1 (mouse) mapping to 17 B1.

SOURCE

CLIC1 (356.1) is a mouse monoclonal antibody raised against recombinant CLIC1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CLIC1 (356.1) is recommended for detection of CLIC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 CLIC1 siRNA (h): sc-60400, CLIC1 siRNA (m): sc-60401, CLIC1 shRNA Plasmid (h): sc-60400-SH, CLIC1 shRNA Plasmid (m): sc-60401-SH, CLIC1 shRNA (h) Lentiviral Particles: sc-60400-V and CLIC1 shRNA (m) Lentiviral Particles: sc-60401-V.

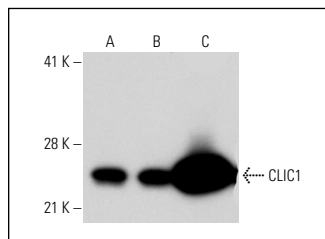
Molecular Weight of CLIC1: 27 kDa.

Positive Controls: CLIC1 (m): 293T Lysate: sc-119305, CLIC1 (h): 293T Lysate: sc-116942 or HL-60 whole cell lysate: sc-2209.

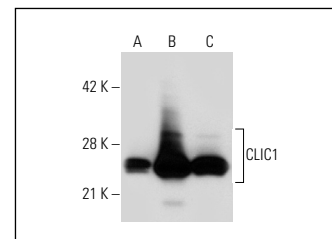
STORAGE

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

DATA



CLIC1 (356.1): sc-81873. Western blot analysis of CLIC1 expression in non-transfected 293T: sc-117752 (A), human CLIC1 transfected 293T: sc-116942 (B) and THP-1 (C) whole cell lysates.



CLIC1 (356.1): sc-81873. Western blot analysis of CLIC1 expression in non-transfected 293T: sc-117752 (A), mouse CLIC1 transfected 293T: sc-119305 (B) and HL-60 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Setti, M., et al. 2013. Functional role of CLIC1 ion channel in glioblastoma-derived stem/progenitor cells. *J. Natl. Cancer Inst.* 105: 1644-1655.
- Ye, Y., et al. 2015. CLIC1 a novel biomarker of intraperitoneal metastasis in serous epithelial ovarian cancer. *Tumour Biol.* 36: 4175-4179.
- Domingo-Fernández, R., et al. 2017. The intracellular chloride channel proteins CLIC1 and CLIC4 induce IL-1 β transcription and activate the NLRP3 inflammasome. *J. Biol. Chem.* 292: 12077-12087.
- Stakaityte, G., et al. 2018. The cellular chloride channels CLIC1 and CLIC4 contribute to virus-mediated cell motility. *J. Biol. Chem.* 293: 4582-4590.
- Yamagishi, A., et al. 2019. The structural function of nestin in cell body softening is correlated with cancer cell metastasis. *Int. J. Biol. Sci.* 15: 1546-1556.
- Meng, M., et al. 2021. CLIC1 facilitates cancer associated fibroblast activation and gastric cancer progression via integrins/NF κ B pathway. *Am. J. Physiol. Gastrointest. Liver Physiol.* 320: G836.
- Varela, L., et al. 2022. A Zn²⁺-triggered two-step mechanism of CLIC1 membrane insertion and activation into chloride channels. *J. Cell Sci.* 135: jcs259704.
- Zapata, R.C., et al. 2023. Targeting Clc1 for the treatment of obesity: a novel therapeutic strategy to reduce food intake and body weight. *Mol. Metab.* 76: 101794.
- Zheng, J.H., et al. 2024. A CLIC1 network coordinates matrix stiffness and the Warburg effect to promote tumor growth in pancreatic cancer. *Cell Rep.* 43: 114633.

RESEARCH USE

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