SANTA CRUZ BIOTECHNOLOGY, INC.

mucolipin 1 (F-10): sc-398868

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The gene encoding human mucolipin 1 maps to chromosome 19p13.2. Mutations in this gene cause a rare, autosomal recessive lysosomal storage disease known as mucolipidosis type IV (MLIV). Clinical characteristics of MLIV include psychomotor retardation, retinal degeneration, corneal opacities and strabismus. Mucolipin 1 localizes to the plasma membrane and contains six transmembrane domains. The carboxy terminus of mucolipin 1 shares sequence homology with polycystin-2 and the transient receptor potential cation channel family. The concentration of intracellular Ca^{2+} regulates the permeability of mucolipin 1 to Ca^{2+}, Na^{+} and K^{+}. The influence of Ca^{2+} on mucolipin 1 represents a possible role for mucolipin 1 in lysosomal exocytosis and the trafficking of late endosomes and lysosmes.

CHROMOSOMAL LOCATION

Genetic locus: MCOLN1 (human) mapping to 19p13.2.

SOURCE

mucolipin 1 (F-10) is a mouse monoclonal antibody raised against amino acids 106-180 mapping within an internal region of mucolipin 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

mucolipin 1 (F-10) is available conjugated to agarose (sc-398868 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398868 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398868 PE), fluorescein (sc-398868 FITC), Alexa Fluor® 488 (sc-398868 AF488), Alexa Fluor® 546 (sc-398868 AF546), Alexa Fluor® 594 (sc-398868 AF594) or Alexa Fluor® 647 (sc-398868 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398868 AF680) or Alexa Fluor® 790 (sc-398868 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

mucolipin 1 (F-10) is recommended for detection of mucolipin 1 of 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 mucolipin 1 siRNA (h): sc-44519, mucolipin 1 shRNA Plasmid (h): sc-44519-SH and mucolipin 1 shRNA (h) Lentiviral Particles: sc-44519-V.

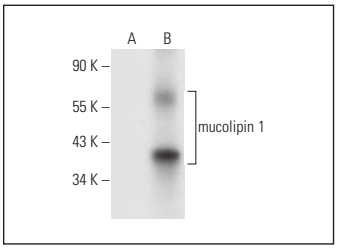
Molecular Weight of mucolipin 1: 65 kDa.

Positive Controls: mucolipin 1 (h): 293T Lysate: sc-171244.

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



mucolipin 1 (F-10): sc-398868. Western blot analysis of mucolipin 1 expression in non-transfected: sc-117752 (**A**) and human mucolipin 1 transfected: sc-171244 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Morelli, M.B., et al. 2019. Transient receptor potential mucolipin 1 channels in glioblastoma: role in patient's survival. Cancers 11: 525.
2. Khan, N., et al. 2019. BK channels regulate extracellular Tat-mediated HIV-1 LTR transactivation. Sci. Rep. 9: 12285.
3. Thakore, P., et al. 2020. TRPML1 channels initiate Ca^{2+} sparks in vascular smooth muscle cells. Sci. Signal. 13: eaba1015.
4. Sun, J., et al. 2022. LAMTOR1 inhibition of TRPML1-dependent lysosomal calcium release regulates dendritic lysosome trafficking and hippocampal neuronal function. EMBO J. 41: e108119.
5. Santoni, G., et al. 2022. Coexpression of TRPML1 and TRPML2 mucolipin channels affects the survival of glioblastoma patients. Int. J. Mol. Sci. 23: 7741.
6. Fan, C., et al. 2024. Inhibition of lysosomal TRPML1 channel eliminates breast cancer stem cells by triggering ferroptosis. Cell Death Discov. 10: 256.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.