SANTA CRUZ BIOTECHNOLOGY, INC.

Munc13-4 (C-2): sc-271300

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Munc13-4 is a member of the Munc13 family and is a homolog to Munc13-1. Munc13-4 lacks the C1 domain and N-terminal extension that are present in other Munc13 family members. It is a peripheral membrane, GTP-Rab 27a-binding protein. Munc13-4 has a ubiquitous tissue distribution; however, unlike related proteins Munc13-1, -2 and -3, Munc13-4 is mainly expressed outside the nervous system. High expression levels of Munc13-4 have been seen in mucous goblet and alveolar type II cells of the lung, as well as in cytotoxic T lymphocytes and mast cells. Munc13-4 localizes to secretory lysosomes. Overexpression of Munc13-4 enhances degranulation of mast cell secretory lysosomes, suggesting that it positively regulates secretory lysosome fusion and exocytosis. Mutations in Munc13-4 cause familial hemophagocytic lymphohistiocytosis subtype 3.

REFERENCES

1. Feldmann, J., et al. 2003. Munc13-4 is essential for cytolytic granules fusion and is mutated in a form of familial hemophagocytic lymphohistiocytosis (FHL-3). Cell 115: 461-473.
2. Shirakawa, R., et al. 2004. Munc13-4 is a GTP-Rab 27-binding protein regulating dense core granule secretion in platelets. J. Biol. Chem. 279: 10730-10737.
3. Neeft, M., et al. 2005. Munc13-4 is an effector of Rab 27a and controls secretion of lysosomes in hematopoietic cells. Mol. Biol. Cell 16: 731-741.
4. Ishii, E., et al. 2005. Genetic subtypes of familial hemophagocytic lymphohistiocytosis: correlations with clinical features and cytotoxic T lymphocyte/natural killer cell functions. Blood 105: 3442-3448.

CHROMOSOMAL LOCATION

Genetic locus: UNC13D (human) mapping to 17q25.1.

SOURCE

Munc13-4 (C-2) is a mouse monoclonal antibody raised against amino acids 136-285 mapping near the N-terminus of Munc13-4 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.

Munc13-4 (C-2) is available conjugated to agarose (sc-271300 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271300 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271300 PE), fluorescein (sc-271300 FITC), Alexa Fluor® 488 (sc-271300 AF488), Alexa Fluor® 546 (sc-271300 AF546), Alexa Fluor® 594 (sc-271300 AF594) or Alexa Fluor® 647 (sc-271300 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271300 AF680) or Alexa Fluor® 790 (sc-271300 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

Munc13-4 (C-2) is recommended for detection of Munc13-4 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), 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 Munc13-4 siRNA (h): sc-62651, Munc13-4 shRNA Plasmid (h): sc-62651-SH and Munc13-4 shRNA (h) Lentiviral Particles: sc-62651-V.

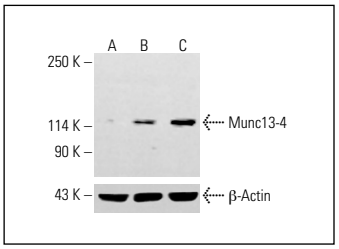
Molecular Weight of Munc13-4: 120 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

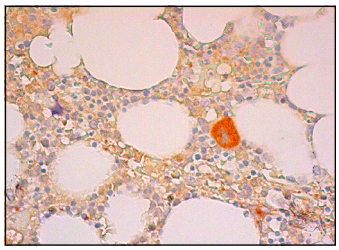
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Munc13-4 (C-2): sc-271300. Western blot analysis of Munc13-4 expression in untreated (**A**) and chemically-treated (**B**, **C**) K-562 whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Munc13-4 (C-2): sc-271300. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of megakaryocyte.

SELECT PRODUCT CITATIONS

1. Golla, K., et al. 2023. A novel association between platelet filamin A and soluble N-ethylmaleimide sensitive factor attachment proteins regulates granule secretion. Res. Pract. Thromb. Haemost. 7: 100019.

STORAGE

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