SANTA CRUZ BIOTECHNOLOGY, INC.

CD71 (3B8 2A1): sc-32272

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CD71, also known as the transferrin receptor (TFR), is a type II membrane glycoprotein that exists as a disulfide-linked homodimer of two identical subunits. CD71 binds to two molecules of transferrin and a serum iron-transport protein, and directs the cellular uptake of iron via receptor-mediated endocytosis. CD71 is expressed, typically at high levels, on all proliferating cells, reticulocytes and erythroid precursors. It is not expressed on resting leukocytes, but is upregulated upon activation of lymphocytes, monocytes and macrophages. CD71 is also found on most dividing cells and on brain endothelium. A second transferrin receptor, TFR2, also mediates the uptake of transferrin-bound iron. TFR2 is a two-subunit homodimer and is highly expressed in liver as well as in hepatocytes and erythroid precursors. Mutations in the TFR2 gene result in hereditary hemochromatosis type III (HFE3), an iron overloading disorder predominant in Caucasians.

CHROMOSOMAL LOCATION

Genetic locus: TFRC (human) mapping to 3q29.

SOURCE

CD71 (3B8 2A1) is a mouse monoclonal antibody raised against the purified ectodomains of CD71 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.

CD71 (3B8 2A1) is available conjugated to agarose (sc-32272 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32272 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32272 PE), fluorescein (sc-32272 FITC), Alexa Fluor® 488 (sc-32272 AF488), Alexa Fluor® 546 (sc-32272 AF546), Alexa Fluor® 594 (sc-32272 AF594) or Alexa Fluor® 647 (sc-32272 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32272 AF680) or Alexa Fluor® 790 (sc-32272 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD71 (3B8 2A1) is recommended for detection of CD71 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CD71 siRNA (h): sc-37070, CD71 shRNA Plasmid (h): sc-37070-SH and CD71 shRNA (h) Lentiviral Particles: sc-37070-V.

Molecular Weight of CD71: 85-95 kDa.

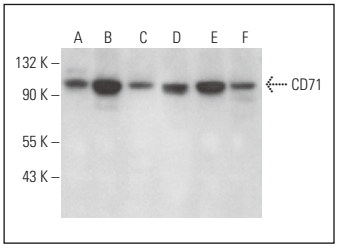
Molecular Weight of CD71 dimer: 190 kDa.

Positive Controls: T-47D cell lysate: sc-2293, CCRF-CEM cell lysate: sc-2225 or HL-60 whole cell lysate: sc-2209.

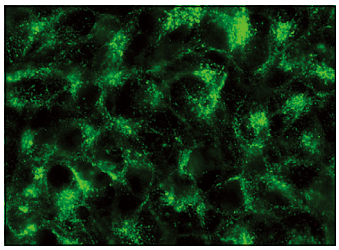
STORAGE

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

DATA



CD71 (3B8 2A1): sc-32272. Western blot analysis of CD71 expression in CCRF-CEM (**A**), T-47D (**B**), HL-60 (**C**), SUP-T1 (**D**), ALL-SIL (**E**) and TF-1 (**F**) whole cell lysates.



CD71 (3B8 2A1): sc-32272. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Millan, J., et al. 2006. Lymphocyte transcellular migration occurs through recruitment of endothelial ICAM-1 to caveola- and F-Actin-rich domains. Nat. Cell Biol. 8: 113-123.
2. Villanueva-Toledo, J., et al. 2014. Side populations from cervical-cancer-derived cell lines have stem-cell-like properties. Mol. Biol. Rep. 41: 1993-2004.
3. Stalekar, M., et al. 2015. Proteomic analyses reveal that loss of TDP-43 affects RNA processing and intracellular transport. Neuroscience 293: 157-170.
4. Shapiro, J.M., et al. 2016. Identification of tumor antigen AF20 as glycosylated transferrin receptor 1 in complex with heat shock protein 90 and/or transporting ATPase. PLoS ONE 11: e0165227.
5. Gao, Z., et al. 2017. Mitochondria chaperone GRP75 moonlighting as a cell cycle controller to derail endocytosis provides an opportunity for nanomicrosphere intracellular delivery. Oncotarget 8: 58536-58552.
6. Zhao, L., et al. 2018. FLCN is a novel Rab11A-interacting protein that is involved in the Rab11A-mediated recycling transport. J. Cell Sci. 131: jcs218792.
7. Dittmer, J., et al. 2019. Spatial signal repression as an additional role of Sprouty2 protein variants. Cell. Signal. 62: 109332.
8. Feng, H., et al. 2020. Transferrin receptor is a specific ferroptosis marker. Cell Rep. 30: 3411-3423.e7.
9. Wang, X., et al. 2021. FLCN regulates transferrin receptor 1 transport and iron homeostasis. J. Biol. Chem. 296: 100426.
10. Yoshinaga, M., et al. 2022. The N^6-methyladenosine methyltransferase METTL16 enables erythropoiesis through safeguarding genome integrity. Nat. Commun. 13: 6435.

RESEARCH USE

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