SANTA CRUZ BIOTECHNOLOGY, INC.

CD71 (YTA 74.4): sc-59112

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 (mouse) mapping to 16 B3.

SOURCE

CD71 (YTA 74.4) is a rat monoclonal antibody raised against concanavalin A-stimulated spleen cells of mouse origin.

PRODUCT

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

CD71 (YTA 74.4) is available conjugated to agarose (sc-59112 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-59112 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59112 PE), fluorescein (sc-59112 FITC), Alexa Fluor® 488 (sc-59112 AF488), Alexa Fluor® 546 (sc-59112 AF546), Alexa Fluor® 594 (sc-59112 AF594) or Alexa Fluor® 647 (sc-59112 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59112 AF680) or Alexa Fluor® 790 (sc-59112 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CD71 (YTA 74.4) is recommended for detection of CD71 of mouse and rat 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 (m): sc-37071, CD71 shRNA Plasmid (m): sc-37071-SH and CD71 shRNA (m) Lentiviral Particles: sc-37071-V.

Molecular Weight of CD71: 85-95 kDa.

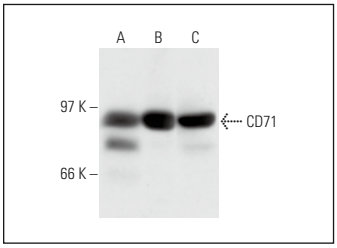
Molecular Weight of CD71 dimer: 190 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, M1 whole cell lysate: sc-364782 or TK-1 whole cell lysate: sc-364798.

STORAGE

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

DATA



CD71 (YTA 74.4): sc-59112. Western blot analysis of CD71 expression in RAW 264.7 (**A**), M1 (**B**) and TK-1 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kim, S., et al. 2010. Posttranslational regulation of membrane type 1-matrix metalloproteinase (MT1-MMP) in mouse PTEN null prostate cancer cells: enhanced surface expression and differential O-glycosylation of MT1-MMP. Biochim. Biophys. Acta 1803: 1287-1297.
2. Wang, H., et al. 2013. Enhanced endoplasmic reticulum entry of tumor antigen is crucial for cross-presentation induced by dendritic cell-targeted vaccination. J. Immunol. 191: 6010-6021.
3. Zwifelhofer, N.M., et al. 2020. GATA factor-regulated solute carrier ensemble reveals a nucleoside transporter-dependent differentiation mechanism. PLoS Genet. 16: e1009286.
4. Qiang, Q., et al. 2021. Erythrocyte adenosine A2B receptor prevents cognitive and auditory dysfunction by promoting hypoxic and metabolic reprogramming. PLoS Biol. 19: e3001239.
5. Casamassa, A., et al. 2022. In brain post-ischemic plasticity, Na^+/Ca^{2+} exchanger 1 and ASCL1 intervene in microglia-dependent conversion of astrocytes into neuronal lineage. Cell Calcium 105: 102608.
6. Zhao, P., et al. 2022. Enhanced anti-angiogenetic effect of transferrin receptor-mediated delivery of VEGF-trap in a glioblastoma mouse model. MAbs 14: 2057269.
7. Shen, Y., et al. 2022. Geniposide possesses the protective effect on myocardial injury by inhibiting oxidative stress and ferroptosis via activation of the Grsf1/GPx4 Axis. Front. Pharmacol. 13: 879870.

RESEARCH USE

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

PROTOCOLS

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