SANTA CRUZ BIOTECHNOLOGY, INC.

CD71 (2B6): sc-51829

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.

REFERENCES

1. McClelland, A., et al. 1984. The human transferrin receptor gene: genomic organization, and the complete primary structure of the receptor deduced from a cDNA sequence. Cell 39: 267-274.
2. Lesley, J., et al. 1984. Expression of transferrin receptor on murine hematopoietic progenitors. Cell. Immunol. 83: 14-25.

CHROMOSOMAL LOCATION

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

SOURCE

CD71 (2B6) is a mouse monoclonal antibody raised against purified CD71 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CD71 (2B6) is recommended for detection of CD71 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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: CD71 (h): 293T Lysate: sc-175273, CCRF-CEM cell lysate: sc-2225 or Jurkat whole cell lysate: sc-2204.

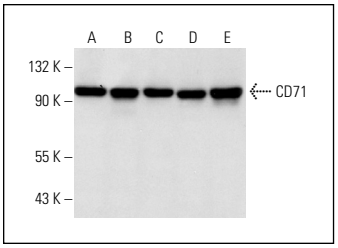
STORAGE

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

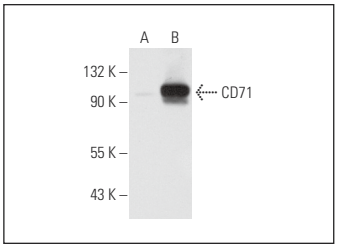
RESEARCH USE

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

DATA



CD71 (2B6): sc-51829. Western blot analysis of CD71 expression in CCRF-CEM (**A**), Jurkat (**B**), K-562 (**C**), MCF7 (**D**) and SJRH30 (**E**) whole cell lysates.



CD71 (2B6): sc-51829. Western blot analysis of CD71 expression in non-transfected: sc-117752 (**A**) and human CD71 transfected: sc-175273 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kenneth, N.S., et al. 2013. TfR1 interacts with the IKK complex and is involved in IKK-NFκB signalling. Biochem. J. 449: 275-284.
2. Bauckman, K.A., et al. 2013. Iron modulates cell survival in a Ras- and MAPK-dependent manner in ovarian cells. Cell Death Dis. 4: e592.
3. Bauckman, K., et al. 2015. Iron alters cell survival in a mitochondria-dependent pathway in ovarian cancer cells. Biochem. J. 466: 401-413.
4. Ng, E., et al. 2016. Neuronal calcium sensor-1 deletion in the mouse decreases motivation and dopamine release in the nucleus accumbens. Behav. Brain Res. 301: 213-225.
5. Rockfield, S., et al. 2018. Proteomic profiling of iron-treated ovarian cells identifies Akt activation that modulates the CLEAR network. Proteomics 18: e1800244.
6. Boulakirba, S., et al. 2018. IL-34 and CSF-1 display an equivalent macrophage differentiation ability but a different polarization potential. Sci. Rep. 8: 256.
7. Rockfield, S., et al. 2018. Expression and function of nuclear receptor coactivator 4 isoforms in transformed endometriotic and malignant ovarian cells. Oncotarget 9: 5344-5367.
8. Minetti, G., et al. 2020. Membrane rearrangements in the maturation of circulating human reticulocytes. Front. Physiol. 11: 215.
9. Sabbir, M.G. 2020. CAMKK2-CAMK4 signaling regulates transferrin trafficking, turnover, and iron homeostasis. Cell Commun. Signal. 18: 80.
10. Sabbir, M.G., et al. 2020. Hypomorphic CAMKK2 in EA.hy926 endothelial cells causes abnormal transferrin trafficking, iron homeostasis and glucose metabolism. Biochim. Biophys. Acta Mol. Cell Res. 1867: 118763.

CONJUGATES

See **CD71 (3B8 2A1): sc-32272** for CD71 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.