

CD71 (T56/14): sc-59111

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

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2. 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.
3. Lesley, J.F., et al. 1985. Inhibition of cell growth by monoclonal anti-transferrin receptor antibodies. *Mol. Cell. Biol.* 5: 1814-1821.
4. Kemp, J.D., et al. 1987. Role of the transferrin receptor in lymphocyte growth: a rat IgG monoclonal antibody against the murine transferrin receptor produces highly selective inhibition of T and B cell activation protocols. *J. Immunol.* 138: 2422-2426.
5. Sauvage, C.A., et al. 1987. Effects of monoclonal antibodies that block transferrin receptor function on the *in vivo* growth of a syngeneic murine leukemia. *Cancer Res.* 47: 747-753.
6. Kemp, J.D., et al. 1989. Inhibition of lymphocyte activation with anti-transferrin receptor Mabs: a comparison of three reagents and further studies of their range of effects and mechanism of action. *Cell. Immunol.* 122: 218-230.
7. Testa, U., et al. 1993. The transferrin receptor. *Crit. Rev. Oncog.* 4: 241-276.
8. Brekelmans, P., et al. 1994. Transferrin receptor expression as a marker of immature cycling thymocytes in the mouse. *Cell. Immunol.* 159: 331-339.

CHROMOSOMAL LOCATION

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

SOURCE

CD71 (T56/14) is a mouse monoclonal antibody raised against haematopoietic cell line K-562 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CD71 (T56/14) 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)] and flow cytometry (1 µg per 1 x 10⁶ 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.

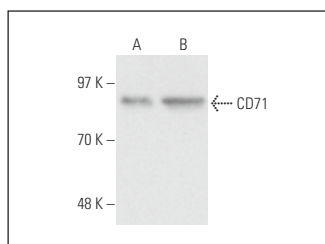
Molecular Weight of CD71 dimer: 190 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

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).

DATA



CD71 (T56/14): sc-59111. Western blot analysis of CD71 expression in K-562 (A) and CCRF-CEM (B) whole cell lysates.

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.

PROTOCOLS

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



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.