

transferrin (11D3): sc-52256

BACKGROUND

Iron (Fe) is a tightly metabolically controlled mineral and growth factor present in all living cells. Iron not bound in erythrocyte hemoglobin is transported by transferrin (Tf), the iron transport protein of vertebrate serum. The transferrin protein contains two homologous domains, each of which contain an Fe-binding site. The majority of transferrin is synthesized in the liver and secreted into the blood, but it is also produced in lower amounts in testis and brain as well as in oligodendrocytes, where transferrin is an early marker of oligodendrocyte differentiation. From the blood, transferrin is internalized by erythroblasts and reticulocytes upon binding the transferrin receptor (TfR), also designated CD71, through a system of coated pits and vesicles. After Fe release, transferrin is returned to the extracellular medium, where it can be reused. Defects in the transferrin gene results in atransferrinemia, a rare autosomal recessive disorder characterized by microcytic anemia and iron loading.

REFERENCES

1. MacGillivray, R.T., et al. 1983. The primary structure of human serum transferrin. The structures of seven cyanogen bromide fragments and the assembly of the complete structure. *J. Biol. Chem.* 258: 3543-3553.
2. Yang, F., et al. 1984. Human transferrin: cDNA characterization and chromosomal localization. *Proc. Natl. Acad. Sci. USA* 81: 2752-2756.
3. Bartek, J., et al. 1985. Phylogenetically more conservative epitopes among monoclonal antibody-defined antigenic sites of human transferrin are involved in receptor binding. *Br. J. Haematol.* 59: 435-441.

CHROMOSOMAL LOCATION

Genetic locus: TF (human) mapping to 3q22.1; Tf (mouse) mapping to 9 F1.

SOURCE

transferrin (11D3) is a mouse monoclonal antibody raised against transferrin of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

transferrin (11D3) is recommended for detection of transferrin of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for transferrin siRNA (h): sc-37176, transferrin siRNA (m): sc-37177, transferrin shRNA Plasmid (h): sc-37176-SH, transferrin shRNA Plasmid (m): sc-37177-SH, transferrin shRNA (h) Lentiviral Particles: sc-37176-V and transferrin shRNA (m) Lentiviral Particles: sc-37177-V.

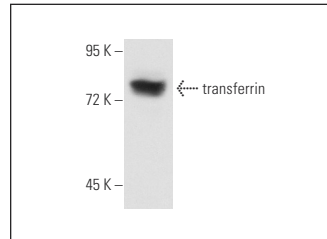
Molecular Weight of transferrin: 79 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

STORAGE

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

DATA



transferrin (11D3): sc-52256. Western blot analysis of transferrin expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Lacerda, C.M., et al. 2009. Differential protein expression between normal, early-stage, and late-stage myxomatous mitral valves from dogs. *Proteomics Clin. Appl.* 3: 1422-1429.
2. Patel, A., et al. 2015. RCAN1 links impaired neurotrophin trafficking to aberrant development of the sympathetic nervous system in Down syndrome. *Nat. Commun.* 6: 10119.
3. Poli, G., et al. 2015. 2D-DIGE proteomic analysis identifies new potential therapeutic targets for adrenocortical carcinoma. *Oncotarget* 6: 5695-5706.
4. Wang, K., et al. 2017. Iron-chelating drugs enhance cone photoreceptor survival in a mouse model of retinitis pigmentosa. *Invest. Ophthalmol. Vis. Sci.* 58: 5287-5297.
5. Avalos-de León, C.G., et al. 2019. The role of GLP1 in rat steatotic and non-steatotic liver transplantation from cardiocirculatory death donors. *Cells* 8: 1599.
6. Hendricks, M.R., et al. 2021. Extracellular vesicles promote transkingdom nutrient transfer during viral-bacterial co-infection. *Cell Rep.* 34: 108672.
7. Choi, D.H., et al. 2021. Treadmill exercise alleviates brain iron dyshomeostasis accelerating neuronal Amyloid-β production, neuronal cell death, and cognitive impairment in transgenic mice model of Alzheimer's disease. *Mol. Neurobiol.* 58: 3208-3223.
8. Jiang, Z., et al. 2022. KLF15 cistromes reveal a hepatocyte pathway governing plasma corticosteroid transport and systemic inflammation. *Sci. Adv.* 8: eabj2917.

RESEARCH USE

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



See **transferrin (D-9): sc-365871** for transferrin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.