

transferrin (M-70): sc-30159

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

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- Yang, F., et al. 1984. Human transferrin: cDNA characterization and chromosomal localization. *Proc. Natl. Acad. Sci. USA* 81: 2752-2756.
- Morgan, E.H. and Baker, E. 1986. Iron uptake and metabolism by hepatocytes. *Fed. Proc.* 45: 2810-2816.
- Irie, S., et al. 1987. Transferrin-mediated cellular iron uptake. *Am. J. Med. Sci.* 293: 103-111.
- Kohgo, Y., et al. 1991. Expression and extracellular release of transferrin receptors on erythropoiesis. *Rinsho Ketsueki* 32: 580-586.
- Zakin, M.M. 1992. Regulation of transferrin gene expression. *FASEB J.* 6: 3253-3258.
- de Arriba Zerpa, G.A., et al. 2000. Alternative splicing prevents transferrin secretion during differentiation of a human oligodendrocyte cell line. *J. Neurosci. Res.* 61: 388-395.

CHROMOSOMAL LOCATION

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

SOURCE

transferrin (M-70) is a rabbit polyclonal antibody raised against amino acids 141-210 mapping within an internal region of transferrin of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

transferrin (M-70) 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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, mouse liver extract: sc-2256 or rat kidney extract: sc-2394.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Chen, H., et al. 2008. Changes in iron-regulatory proteins in the aged rodent neural retina. *Neurobiol. Aging* 30: 1865-1876.
- Tseng, P.H., et al. 2010. Different modes of ubiquitination of the adaptor TRAF3 selectively activate the expression of type I interferons and pro-inflammatory cytokines. *Nat. Immunol.* 11: 70-75.
- Versura, P., et al. 2012. A rapid standardized quantitative microfluidic system approach for evaluating human tear proteins. *Mol. Vis.* 18: 2526-2537.

STORAGE

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



Try **transferrin (D-9): sc-365871** or **transferrin (F-8): sc-373785**, our highly recommended monoclonal alternatives to transferrin (M-70). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **transferrin (D-9): sc-365871**.