

TFR2 (B-6): sc-376278

BACKGROUND

Iron is a vital molecule for living organisms because it is involved in a wide variety of metabolic processes, such as oxygen transport, DNA synthesis and electron transport. Excessive iron uptake leads to tissue damage as a result of formation of free radicals. Iron uptake and storage is tightly regulated by the feedback system of iron responsive element-containing gene products and iron regulatory proteins that modulate the expression levels of the genes involved in iron metabolism. The transferrin receptor 2 (TFR2) mediates the uptake of transferrin-bound iron. It is involved in iron metabolism, hepatocyte function and erythrocyte differentiation, and is highly expressed as a protein in liver as well as in hepatocytes and erythroid precursors. The gene encoding human TFR2 maps to chromosome 7q22.1 and is expressed as an α isoform, which encodes a transmembrane protein, and a β isoform, which encodes a shorter, intracellular protein. Mutations in the TFR2 gene result in hereditary hemochromatosis type III (HFE3), an iron overloading disorder that results in clinical complications, including cirrhosis, cardiopathy, diabetes, endocrine dysfunctions, arthropathy and susceptibility to liver cancer.

CHROMOSOMAL LOCATION

Genetic locus: TFR2 (human) mapping to 7q22.1.

SOURCE

TFR2 (B-6) is a mouse monoclonal antibody raised against amino acids 531-670 mapping within an extracellular domain of TFR2 of human origin.

PRODUCT

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

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.

APPLICATIONS

TFR2 (B-6) is recommended for detection of TFR2 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 TFR2 siRNA (h): sc-42997, TFR2 shRNA Plasmid (h): sc-42997-SH and TFR2 shRNA (h) Lentiviral Particles: sc-42997-V.

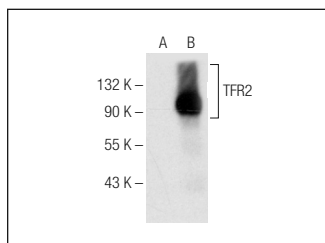
Molecular Weight of TFR2: 97-105 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, TF-1 cell lysate: sc-2412 or TFR2 (h): 293T Lysate: sc-112673.

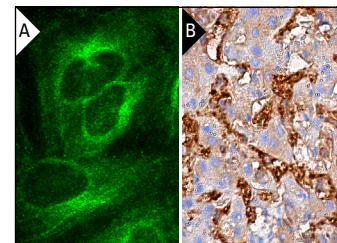
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



TFR2 (B-6): sc-376278. Western blot analysis of TFR2 expression in non-transfected: sc-117752 (A) and human TFR2 transfected: sc-112673 (B) 293T whole cell lysates.



TFR2 (B-6): sc-376278. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing staining of bile ducts (B).

SELECT PRODUCT CITATIONS

- Khalil, S., et al. 2018. Iron modulation of erythropoiesis is associated with Scribble-mediated control of the erythropoietin receptor. *J. Exp. Med.* 215: 661-679.
- Hamed Asl, D., et al. 2019. The role of transferrin receptor in the *Helicobacter pylori* pathogenesis; L-ferritin as a novel marker for intestinal metaplasia. *Microb. Pathog.* 126: 157-164.
- Sadvakassova, G., et al. 2021. Active hematopoiesis triggers exosomal release of PRDX2 that promotes osteoclast formation. *Physiol. Rep.* 9: e14745.
- Aronova, M.A., et al. 2021. Use of dual-electron probes reveals the role of ferritin as an iron depot in *ex vivo* erythropoiesis. *iScience* 24: 102901.

PROTOCOLS

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



See **TFR2 (9F8 1C11): sc-32271** for TFR2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.