SANTA CRUZ BIOTECHNOLOGY, INC.

TFR2 (H-140): sc-48747

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 TRF2 maps to chromosome 7q22.1 and is expressed as an a isoform, which encodes a transmembrane protein, and a b 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; Tfr2 (mouse) mapping to 5 G2.

SOURCE

TFR2 (H-140) is a rabbit polyclonal antibody raised against amino acids 531-670 mapping within an extracellular domain of TFR2 of human origin.

PRODUCT

Each vial contains 200 µg IgG 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.

APPLICATIONS

TFR2 (H-140) is recommended for detection of TFR2 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).

TFR2 (H-140) is also recommended for detection of TFR2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TFR2 siRNA (h): sc-42997, TFR2 siRNA (m): sc-42998, TFR2 shRNA Plasmid (h): sc-42997-SH, TFR2 shRNA Plasmid (m): sc-42998-SH, TFR2 shRNA (h) Lentiviral Particles: sc-42997-V and TFR2 shRNA (m) Lentiviral Particles: sc-42998-V.

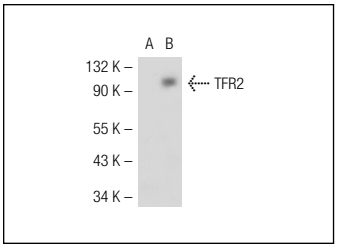
Molecular Weight of TFR2: 97-105 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, TFR2 (h): 293T Lysate: sc-112673 or Hep G2 cell lysate: sc-2227.

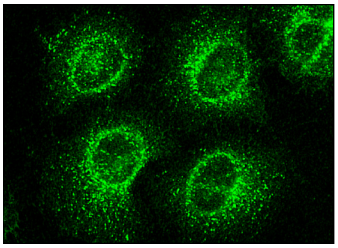
RECOMMENDED SECONDARY REAGENTS

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.

DATA



TFR2 (H-140): sc-48747. Western blot analysis of TFR2 expression in non-transfected: sc-117752 (**A**) and human TFR2 transfected: sc-112673 (**B**) 293T whole cell lysates.



TFR2 (H-140): sc-48747. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Tong, W.Y., et al. 2010. Biochemical characterization of the cell-bio-material interface by quantitative proteomics. Mol. Cell. Proteomics 9: 2089-2098.
2. Hegde, N.V., et al. 2011. Interrelationships between tissue iron status and erythropoiesis during postweaning development following neonatal iron deficiency in rats. Am. J. Physiol. Gastrointest. Liver Physiol. 300: G470-G476.
3. Broderius, M., et al. 2012. Suppressed hepcidin expression correlates with hypotransferrinemia in copper-deficient rat pups but not dams. Genes Nutr. 7: 405-414.
4. Bloomer, S.A., et al. 2014. Heat stress stimulates hepcidin mRNA expression and C/EBPα protein expression in aged rodent liver. Arch. Gerontol. Geriatr. 58: 145-152.

RESEARCH USE

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