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TFRC Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1863a

Product Information

Application	WB, E
Primary Accession	P02786
Reactivity	Human, Mouse, Rat, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	1A1B2
Isotype	IgG1
Calculated MW	84871
Description	Transferrin receptor is a carrier protein for transferrin. It is needed for the import of iron into the cell and is regulated in response to intracellular iron concentration. Low iron concentrations promote increased levels of transferrin receptor, to increase iron intake into the cell. Thus, transferrin receptor maintains cellular iron homeostasis. Expression of human TFR1, but not human TFR2, in hamster cell lines markedly enhanced the infection of viruses pseudotyped with the glycoprotein of Machupo, Guanarito, and Junin viruses, but not with those of Lassa or lymphocytic choriomeningitis viruses. An anti-TFR1 antibody efficiently inhibited the replication of Machupo, Guanarito, Junin, and Sabia viruses, but not that of Lassa virus.TFR1 is a cellular receptor for New World hemorrhagic fever arenaviruses.
Immunogen	Purified recombinant fragment of human TFRC (AA: 608-727) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	7037
Other Names	Transferrin receptor protein 1, TR, TfR, TfR1, Trfr, T9, p90, CD71, Transferrin receptor protein 1, serum form, sTfR, TFRC
Dilution	WB~~1/500 - 1/2000 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TFRC Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TFRC
Function	Cellular uptake of iron occurs via receptor-mediated endocytosis of ligand-occupied transferrin receptor into specialized endosomes (PubMed:26214738). Endosomal acidification leads to iron release. The apotransferrin-receptor complex is then recycled to the cell surface with a return to neutral pH and the concomitant loss of affinity of apotransferrin for its receptor. Transferrin receptor is necessary for development of erythrocytes and the nervous system (By similarity). A second ligand, the hereditary hemochromatosis protein HFE, competes for binding with transferrin for an overlapping C- terminal binding site. Positively regulates T and B cell proliferation through iron uptake (PubMed:26642240). Acts as a lipid sensor that regulates mitochondrial fusion by regulating activation of the JNK pathway (PubMed:26214738). When dietary levels of stearate (C18:0) are low, promotes activation of the JNK pathway, resulting in HUWE1- mediated ubiquitination and subsequent degradation of the mitofusin MFN2 and inhibition of mitochondrial fusion (PubMed:26214738). When dietary levels of stearate (C18:0) are high, TFRC stearoylation inhibits activation of the JNK pathway and thus degradation of the mitofusin MFN2 (PubMed:26214738). Mediates uptake of NICOL1 into fibroblasts where it may regulate extracellular matrix production (By similarity).
Cellular Location	Cell membrane; Single-pass type II membrane protein Melanosome. Note=Identified by mass spectrometry in melanosome fractions from stage I to stage IV

Background

The protein encoded by this gene is similar in sequence to 3'/5' exonucleolytic subunits of the RNA exosome. The exosome is a large multimeric ribonucleotide complex responsible for degrading various RNA substrates. Several transcript variants, some protein-coding and some not, have been found for this gene. ;

References

1. Folia Histochem Cytobiol. 2012 Jul 5;50(2):304-11. 2. J Biol Chem. 2011 Oct 14;286(41):35708-15.

Images

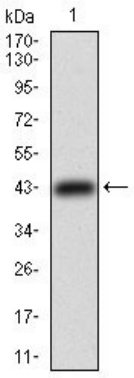

Figure 1: Western blot analysis using TFRC mAb against human TFRC recombinant protein. (Expected MW is 39.7 kDa)

Figure 2: Western blot analysis using TFRC mAb against HEK293 (1) and TFRC (AA: 608-727)-hIgGFc transfected HEK293 (2) cell lysate.

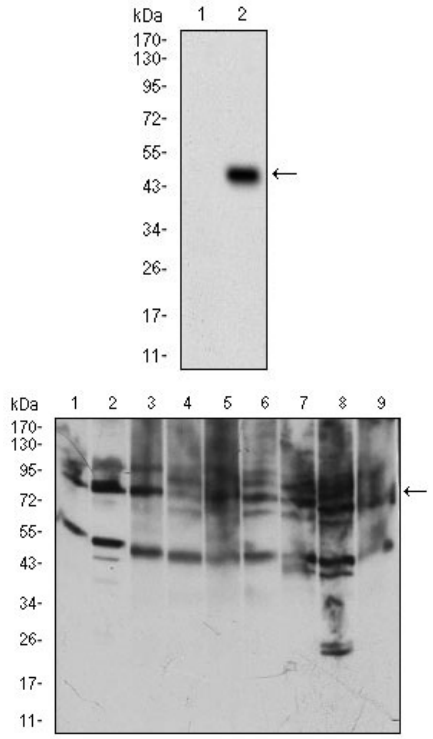

Figure 3: Western blot analysis using TFRC mouse mAb against Jurkat (1), Hela (2), K562 (3), Cos7 (4), MCF-7 (5), PC-12 (6), NIH/3T3 (7), HEK293 (8), RAJI (9) cell lysate.