

Product Specification Sheet

Rabbit Anti-Mouse Transferrin Receptor 2 (TfR2-alpha) Antibodies

Cat. # TFR21-S Rabbit Anti-Mouse TfR2 antiserum	SIZE: 100 ul
Cat. # TFR21-A Rabbit Anti-Mouse TfR2 IgG, Aff. pure	SIZE: 100 ug
Cat. # TFR21-P Mouse TfR2 control/blocking peptide	SIZE: 100 ug

Elemental iron is required for a variety of normal cellular functions and vital for proper growth and development. **Transferrin (Tf)**, a serum glycoprotein of ~80 kDa and synthesized in the liver, is the primary protein of inter-organ transport of nonheme iron. Tf can bind two iron atoms. Tf binds to membrane **Transferrin receptors (TfRs)** and taken up by endocytosis. Iron is released from Tf, within acidic endosomes, into the cytoplasm apparently through the action of DMT1. The apoTf-TfR complex is returned to the cell surface, where, apo-Tf dissociates from TfR at the extracellular pH. The classical TfR, now termed **TfR1**, is a homodimeric (95 kDa subunits) type II membrane glycoprotein that binds two molecules of Tf. Human TfR1 (human 760 aa; mouse 763 aa) has a cytoplasmic domain 1-67aa, 68-88 aa TM, and 89-760 aa as extracellular domains. A monomeric serum form or **soluble TfR1** (~80 kDa) also exists that lacks residues 1-100 aa. Recently, a second Tf receptor, **TfR2**, has been cloned and characterized. TfR2 shares 45% identity with TfR1, and 27% with PMSA. Human TfR2 (human alpha 801 aa, Chromosome 7q22; mouse alpha 798 aa;) is predicted to contain a cytoplasmic domain of 1-80 aa, 1 TM domain followed by 105-801aa as the extracellular domain. It is highly expressed in liver and peripheral blood mononuclear cells. In contrast to TfR1, expression of TfR2 is not down regulated as a result of iron overload, consistent with the absence iron-responsive element in TfR2. It is alternatively spliced to **alpha and beta isoforms**. TfR2-beta lacked the N-terminal portion of the TfR2-alpha including the putative TM domain.

Function: Mediates cellular uptake of transferrin-bound iron in a non-iron dependent manner. May be involved in iron metabolism, hepatocyte function and erythrocyte differentiation.

Subcellular Location: Cell membrane; Single-pass type II membrane protein. Isoform 3: Cytoplasm.

Similarity: Belongs to the peptidase M28 family. M28B subfamily.

Protein name Transferrin receptor protein 2

Synonym TfR2

Gene name Name: TfR2; Synonyms: TfR2

Source of Antigen and Antibodies

Antigen	19-aa peptide from mouse TfR2 (1) ; (protein accession #Q9JKX3, refs 1) Designation (H-P, control/blocking peptide) conjugated to KLH; Epitope location ~ N-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#TFR21-S) and IgG, purified over antigen-agarose (Cat # TFR21-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting: 1;1000-1:3000 dilution of unpurified or 1-5 ug/ml of the affinity pure using ECL technique. TfR2-alpha is approx ~105 kDa, slightly larger than the expected 95 kDa and may represent some posttranslational modifications. Under non-reducing conditions, TfR2 forms dimers.

ELISA: 0.1-2 ug/ml.

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

Mouse TFR21-P peptide sequence is 68% conserved in human TfR2-alpha. This sequence is missing in TfR-beta isoform. No significant sequence homology of TFR21-P is seen with TfR1, PMSA or other proteins. Antibody reactivity in various species is not established. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity

General References: Fleming RE et al (2000) PNAS 97, 2214-2219; Kawabata H et al (1999) JBC 274, 20826-20832; Kawabata H et al (2000) JBC 275, 16618-16625; West AP et al (2000) JBC 275, 38135-38138.

*This product is for In vitro research use only.

Related material available from ADI

Antibodies NRAMP1/2, MTP1, Transferrin, and TfRs receptors (TfR1 and TfR2), Ferritin, H and L-chain, Hemeoxygenases 1-3,

TFR21-S-A-P 70926J

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com