

Product Data Sheet

Recombinant (Plant, Animal free) Human Transferrin (Tf) Protein, Apo-transferrin

<input type="checkbox"/> Cat. # TF27-N-100	Recombinant (plant) Human Apotransferrin, Tissue Culture Grade (animal free, biologically active, >95% pure (low endotoxin))	SIZE: 100 mg
<input type="checkbox"/> Cat. # TF27-N-1000	Recombinant (plant) Human Apotransferrin, Tissue Culture Grade (animal free, biologically active, >95% pure (low endotoxin))	SIZE: 1000 mg

Elemental iron is required for a variety of normal cellular functions and vital for proper growth and development. However, natural iron is quite insoluble and excess iron is harmful, since it can catalyze the formation of potentially damaging reactive oxygen species. The major pool of body iron (~85%; 40-50 mg/kg) is found in circulating hemoglobin and muscle myoglobin. Iron absorption occurs primarily in the intestine (duodenum) and inversely related to body iron reserve. Several proteins including **Ferritin, transferrin (Tf), transferrin receptors (TfRs), and iron regulatory proteins (IRPs)** etc play a key role in iron metabolism.

Transferrin is a glycoprotein that binds iron very tightly but reversibly. Although iron bound to transferrin is less than 0.1% (4 mg) of the total body iron, it is the most important iron pool, with the highest rate of turnover (25 mg/24 h). Transferrin has a molecular weight of around 80 Kda and contains 2 specific high-affinity Fe(III) binding sites. The affinity of transferrin for Fe(III) is extremely high (10^{23} M⁻¹ at pH 7.4) but decreases progressively with decreasing pH below neutrality. When not bound to iron, it is known as "**apo-transferrin**". Tf with iron is called "**Holo-Transferrin**". Several variants of Tf have been identified with varying iron binding ability.

Transferrin (Tf, human chromosome 3, 679 aa), 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. 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.

Source of Antigen

Recombinant Human Transferrin (679-aa full length) produced in plant (*Oryza sativa*, Rice) and purified (>98%, 76 Kda).

Form: lyophilized from in 10 mM phosphate buffer, pH 7.4. No additives.

Iron content: 0.01 ug/mg protein;
Iron binding capacity: ~2 ug/mg.

Storage: -20oC or below

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

General References: Bowman, B. H. et al (1988) Adv. Genet. 25: 1-38; Evans, R. W. et al (1982) Biochem. J. 201: 19-26; MacGillivray, R. T. A et al (1982) PNAS 79: 2504-2508; Park, I. et al (1985) PNAS 82, 3149; Uzan, G. et al (1984) BBRC 119, 273; Yang, F. et al (1984) PNAS 81, 2752-2756; Nelson N (1999) EMBO J. 18, 4361; Cairo G I (2000) Biochem. J. 352, 241-250

THIS PRODUCT IS A LABORATORY REAGENT.
IT IS NOT TO BE ADMINISTERED TO HUMANS OR USED FOR ANY DRUG PURPOSE. FOR RESEARCH USE ONLY

Related material available from ADI

Catalog#	ProdDescription
1210	Human Transferrin (Tf) ELISA Kit, 96 tests, Quantitative
1220	Human soluble Transferrin Receptor (sTfR) ELISA Kit, 96 tests, Quantitative
400-195-DGT	Dog Transferrin ELISA Kit, 96 tests, Quantitative
6390	Mouse Transferrin (Tf) ELISA Kit, 96 tests, Quantitative
800-332-AGT	Bovine serum albumin (BSA), IgG and Transferrin removal kit (Antibody based aff matrix; sufficient to remove 1-2 mg protein from Bioprocessed material), 2 ml aff column
8070	Bovine Transferrin ELISA Kit, 96 tests, Quantitative
CECA15-C	Chicken Egg Conalbumin (ovotransferrin) protein control for Western
TF11-A	Anti-Human Transferrin IgG, aff pure
TF11-C	Purified Human Holo-Transferrin Protein WB +ve Control
TF11-HRP	Anti-Human Transferrin IgG-HRP conjugate
TF11-S	Anti-Human Transferrin antiserum
TF12-C	Purified Rat Apo-Transferrin Protein WB +ve Control
TF12-S	Anti-Rat Transferrin (Tf) antiserum
TF13-M	Monoclonal Anti-Human Transferrin (Tf) IgG # 3
TF14-A	Anti-Mouse Transferrin IgG, aff pure
TF14-BTN	Anti-Mouse Transferrin IgG-Biotin conjugate
TF14-C	Purified Mouse Apo-Transferrin Protein WB +ve Control
TF14-HRP	Anti-Mouse Transferrin IgG-HRP conjugate
TF14-N-1	Purified Mouse Apo-Transferrin Protein (>98% pure)
TF15-N	Purified Rat Transferrin Protein for ELISA
TF15-S	Anti-Rat Transferrin (Tf) antiserum
TF16-N	Transferrin, Human Plasma
TF17-N	Transferrin, Human Plasma, Low Endotoxin Level
TF18-A	Anti-Human Transferrin IgG/Y, unlabeled
TF19-A	Anti-Bovine Transferrin (serum) IgG
TF19-AS-2	Anti-Bovine Transferrin (serum) IgG-Agarose, aff column
TF25-N-10	Apotransferrin, Human Plasma
TF26-N-100	Apotransferrin, Human Plasma, Tissue Culture Grade
TF27-N-100	Recombinant (plant) Human Apotransferrin, Tissue Culture Grade (animal free, biologically active, >95% pure
TF27-N-1000	Recombinant (plant) Human Apotransferrin, Tissue Culture Grade (animal free, biologically active, >95% pure

TF27-N-100 140922A

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