

Human Transferrin / TF Protein (His Tag)

Catalog Number: 11019-H08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

HEL-S-71p; PRO1557; PRO2086; TFQTL1; Transferrin

Protein Construction:

A DNA sequence encoding the human transferrin (NP_001054.1) (Met 1-Pro 698) was fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

1. Measured by its binding ability in a functional ELISA. Immobilized human CD71 at 10 µg/ml (100 µl/well) can bind human Transferrin. The EC_{50} of human Transferrin is 5.6 ng/mL. 2. Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. Karey, K.P. et al. (1988) Cancer Research 48:4083. The ED_{50} for this effect is typically 0.01-0.04 µg/mL.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Val 20

Molecular Mass:

The secreted recombinant human transferrin comprises 690 amino acids with a predicted molecular mass of 76.6 kDa. It migrates as an approximately 74 kDa band in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

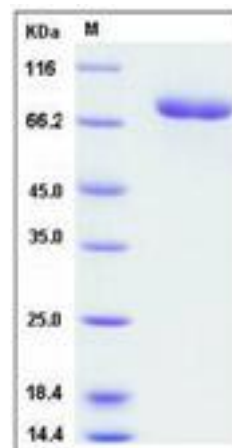
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Transferrin is a glycoprotein with an approximate molecular weight of 76.5 kDa. This glycoprotein is thought to have been created as a result of an ancient gene duplication event that led to generation of homologous C and N-terminal domains each of which binds one ion of ferric iron. The function of Transferrin is to transport iron from the intestine, reticuloendothelial system, and liver parenchymal cells to all proliferating cells in the body. This protein may also have a physiologic role as granulocyte / pollen-binding protein (GPBP) involved in the removal of certain organic matter and allergens from serum. Transferrins are iron binding transport proteins which bind Fe^{3+} ion in association with the binding of an anion, usually bicarbonate. This transferrin binds only one Fe^{3+} ion per protein molecule. Transports iron ions from the hemolymph into the eggs during the vitellogenic stage. Transferrins are iron binding transport proteins which can bind two $Fe(3+)$ ions in association with the binding of an anion, usually bicarbonate. It is responsible for the transport of iron from sites of absorption and heme degradation to those of storage and utilization. Serum transferrin may also have a further role in stimulating cell proliferation. When a transferrin loaded with iron encounters with a transferrin receptor on cell surface, transferrin binds to it and, as a consequence, is transported into the cell in a vesicle by receptor-mediated endocytosis. The PH is reduced by hydrogen ion pumps. The lower pH causes transferrin to release its iron ions. The receptor is then transported through the endocytic cycle back to the cell surface, ready for another round of iron uptake. Each transferrin molecule has the ability to carry two iron ions in the ferric form.

References

1. Ponka P, et al. (1998) Function and regulation of transferrin and ferritin. Semin Hematol. 35(1): 35-54. 2. Wagner E, et al. (1990) Transferrin-polycation conjugates as carriers for DNA uptake into cells. Proc Natl Acad Sci. 87(9): 3410-4. 3. Cheng Y, et al. (2004) Structure of the human transferrin receptor-transferrin complex. Cell. 116 (4): 565-76.

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