Biotinylated Human Transferrin Protein, His,Avitag™ (MALS verified)

Catalog # TRN-H82E3

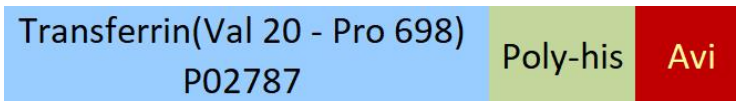
Synonym

Transferrin,TF,DKFZp781D0156,PRO1557,PRO2086

Source

Biotinylated Human Transferrin Protein, His,Avitag(TRN-H82E3) is expressed from human 293 cells (HEK293). It contains AA Val 20 - Pro 698 (Accession # P02787).
Predicted N-terminus: Val 20

Molecular Characterization



This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™)

The protein has a calculated MW of 78.8 kDa. The protein migrates as 70-85 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Labeling

Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.

Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

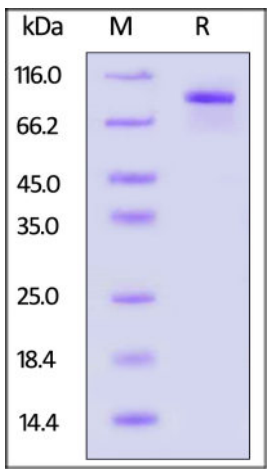
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

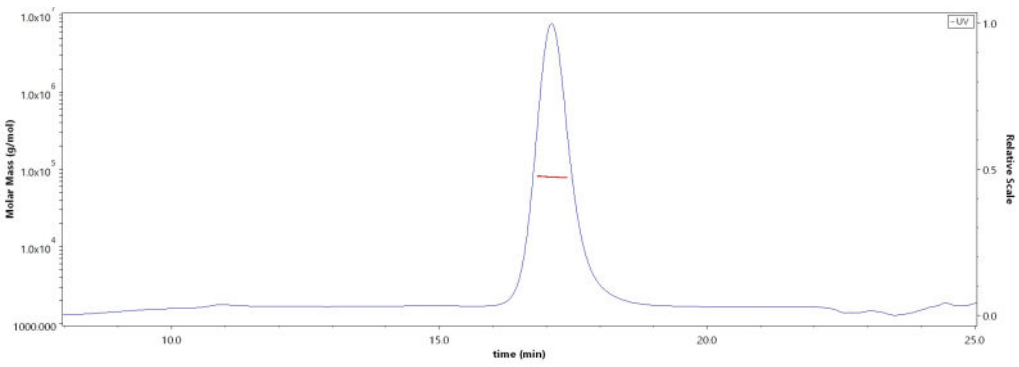
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



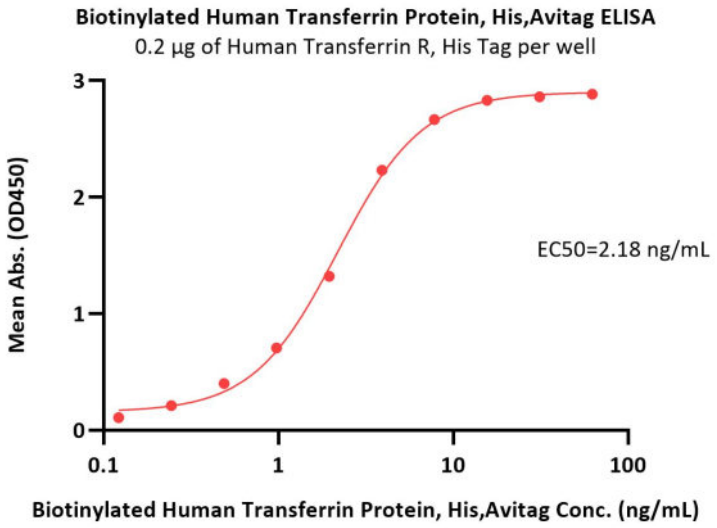
Biotinylated Human Transferrin Protein, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

SEC-MALS



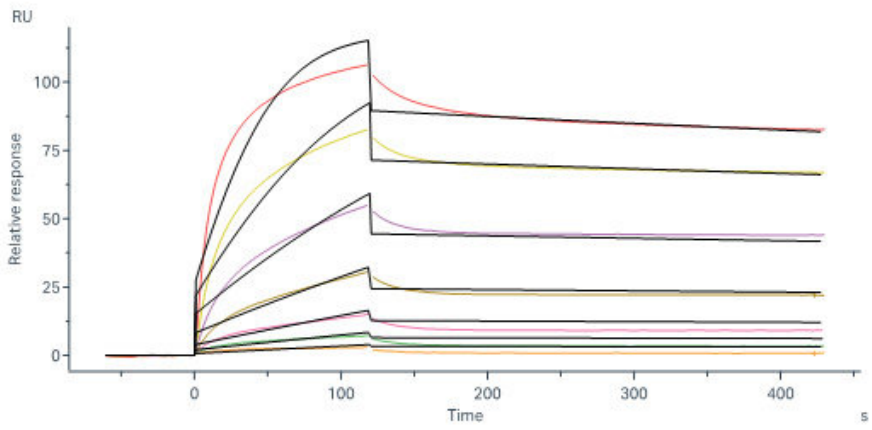
The purity of Biotinylated Human Transferrin Protein, His,Avitag (Cat. No. TRN-H82E3) is more than 90% and the molecular weight of this protein is around 75-95 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA



Immobilized Human Transferrin R, His Tag (Cat. No. CD1-H5243) at 2 μg/mL (100 μL/well) can bind Biotinylated Human Transferrin Protein, His,Avitag (Cat. No. TRN-H82E3) with a linear range of 0.1-4 ng/mL (QC tested).

Bioactivity-SPR



Biotinylated Human Transferrin Protein, His,Avitag (Cat. No. TRN-H82E3) captured on Biotin CAP-Series S Sensor Chip can bind Human Transferrin R, His Tag (Cat. No. CD1-H5243) with an affinity constant of 0.527 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Background

Transferrin is also known as Serotransferrin, Beta-1 metal-binding globulin, TF, and is iron-binding blood plasma glycoproteins that control the level of free iron in biological fluids. 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). The affinity of transferrin for Fe(III) is extremely high (1023 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”. In humans, transferrin consists of a polypeptide chain containing 679 amino acids. It is a complex composed of alpha helices and beta sheets to form two domains (the first situated in the N-terminus and the second in the C-terminus). The N- and C- terminal sequences are represented by globular lobes and between the two lobes is an iron-binding site. The liver is the main source of manufacturing transferrin, but other sources such as the brain also produce this molecule . Transferrin is also associated with the innate immune system. Transferrin is found in the mucosa and binds iron, thus creating an environment low in free iron that impedes bacteria survival in a process called iron withholding. The level of transferrin decreases in inflammation. The metal binding properties of transferrin have a great influence on the biochemistry of plutonium in humans. Transferrin has a bacteriocidal effect on bacteria, in that it makes Fe3+ unavailable to the bacteria.Carbohydrate deficient transferrin increases in the blood with heavy ethanol consumption and can be monitored via laboratory testing.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.