CELL CULTURE REAGENT

BBI Solutions

TRANSFERRIN – APO (LOW IRON)

Abbreviations	Tf
Product Code	T100-5
Source	Normal human serum/plasma from US sourced screened blood donations from licensed donor collection sites. Tested to be Mycoplasma free.
Uses	Designed for use as a supplemental reagent in cell culture including tissue culture, stem cell culture and serum free media. Not for direct in vivo use.

Protein Function	Human Transferrin is a major iron binding glycoprotein and serves as the transport protein for iron delivery in the body. Each molecule of transferrin specifically binds two Fe^{3+} molecules through a bicarbonate mediated site specific binding. The iron content can be adjusted to give near 100% saturation to yield holo-transferrin (T101-5) iron 1200–1700 ug/gm or depleted to give near zero iron bound to yield apo-transferrin (T100-5) iron < 50ug/gm protein. Transferrin is a natural and essential component for cell growth in tissue culture where it is used as an additive for serum free media to propagate cell growth. In culture media, Transferrin has a secondary role to bind endogenous metal ions which may cause cell toxicity.	
Tissue Occurrence & Abundance	Plasma concentration of transferrin is 2–3.2g/l, this is reduced somewhat in pregnancy. Transferrin is a major constituent of plasma and found in all body organs. Transferrin is primarily synthesised in the liver and to a small extent in the brain.	
Function in Cell Culture	Transferrin is an iron transport and delivery protein which promotes cell growth, the Apo form allows controlled addition of iron salts. Apo Transferrin is stabilised by iron binding and readily absorbs iron into its empty binding sites. It can be used to reduce iron load in iron rich media and balance the media.	
Presentation	Single homogenous batch, heat treated at 62°C ± 2°C for 10 hours and lyophilised from 0.2µm filtered solution. May contain traces of buffer salts.	
Structure	Molecular weight	77,000 Two lobes each with an iron binding domain [3]
	Amino acids	698
	Disulphide bonds	19
	pH value(s)	5.1-6.1
	Prosthetic group	None
	Glycosylation	Sialic acid
	Oligomerisation	None
	Isoforms	5 Isoforms with different levels of glycosylation

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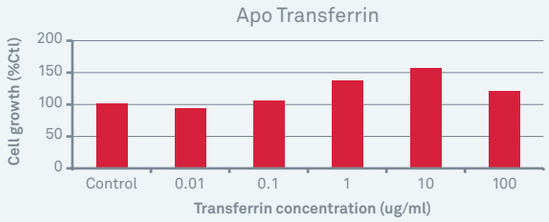
References

1. McGillivray R.T.A., Mendez E., Shewale J.G., Sinha S.K., Lineback-Zins J., Brew K. The primary structure of human serum transferrin. The structures of seven cyanogen bromide fragments and the assembly of the complete structure. J. Biol. Chem. 258:3543-3553 (1983)
2. Crichton RR, Charloteaux-Wauters M (1987). Iron transport and storage. Eur. J. Biochem. 164 (3): 485–506
3. Aisen P, Leibman A, Zweier J (March 1978). Stoichiometric and site characteristics of the binding of iron to human transferrin. J. Biol. Chem. 253 (6): 1930–7

Biological Activity

EC_{50} = 0.537-0.845 µg/ml when externally tested and verified in a Chinese Hamster Ovary (CHO) cell proliferation assay.



Nominal Purity

>98% (Determined by coomassie blue stained SDS-PAGE and Cellulose Acetate Electrophoresis)

Iron content

<50ppm (Iron estimated by ICP)

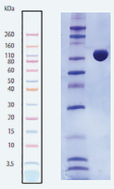
Endotoxin

≤ 1 EU/mg by LAL assay

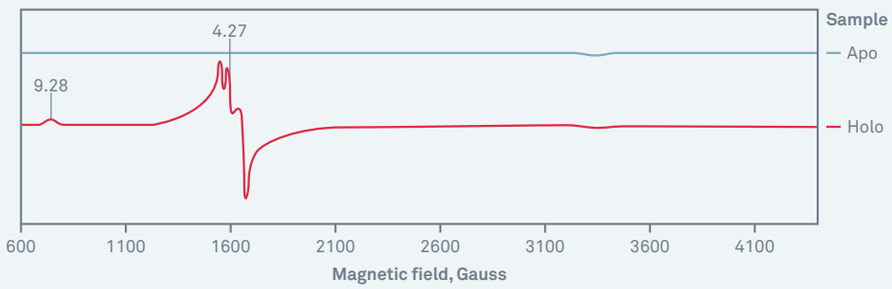
Stability & Formulation

Supplied lyophilised – Store at 2–8°C – Do not freeze

Coomassie stained SDD-PAGE



EPR spectral analysis



ORDERING DETAILS - USE THE FOLLOWING CODES WHEN ORDERING

Product	Code	Description
Human Transferrin (Apo)	T100-5	>98% Pure | supplied lyophilised | sourced from human serum/plasma

Related Products	Code
Human Transferrin (Holo)	T101-5

Order a sample today sales@bbisolutions.com
Int: +44 (0) 1495 363 000 USA: 1-207-797-5454 China: +860216 1042216

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