

# Transferrin

(Immunturbidimetric Test , 5 + 1 )

Cat.No	Package Size
835 001	5 x 20 mL R1 / 1 x 20 mL R2
835 002	Hit 4 x 20 mL R1 / 2 x 8 mL R2

## Testprinciple

Immunturbidimetric test for determination of Transferrin (TRF) by photometric measurement of the Antibody-Antigen reaction between goat-AB on human TRF and TRF in the sample

## Reagents

### Components ( concentrations in the test )

<b>R1:</b>	Phosphate Buffer	100 mmol/l
	NaCl	180 mmol/l
	Accelerator	
	Detergents and stabilizers	
<b>R2:</b>	Phosphate Buffer	100 mmol/l
	NaCl	180 mmol/l
	Antibody (goat) against human TRF	
	Stabilizers	

### Storage / Stability

At 2-8 °C reagents are stable up to the given expiration date printed on the labels, if there is no contamination after opening the bottles.  
Do not freeze reagents !

### Precautions / Warnings

Reagents contain Sodiumazide (0,95 g/l) as **preservative. Do not swallow! Do not touch skin and/or mucous membranes !**

### Waste

Handle according to the local legal regulations

### Preparation

Reagents are ready for use.

### Sample material

Serum, Heparin plasma or EDTA plasma.  
Stability 8 dayse at 2 - 8 °C  
6 months at - 20 °C

**Freeze , if ever necessary , only once .**  
Discard contaminated samples.

## Analytical Procedure

Wavelength	570 nm
Cuvette	1 cm lightpath
Temperature	37 °C
Measure	Against Reagent Blank (RB)

	Reagent-Blank	Sample or calibrator
<b>Sample / Calibrator</b>	-	2 µl
<b>Reagent 1</b>	250 µl	250 µl
Mix, incubate for 3 min, read absorbance A1, then add :		
<b>Reagent 2</b>	50 µl	50 µl
Mix, incubate for 5 min , read absorbance A2 .		

$$\Delta A = [(A2-A1) \text{ Sample or Calibrator}]$$

## Calculation

### Multi-Point-Calibration

The concentration in unknown samples is calculated through a calibration curve using a suitable mathematical procedure e.g. logit/log. The calibration curve is established by 5 calibrators of different concentrations and NaCl-solution (9 g/l) for zero .  
Stability of calibration is 4 weeks.

### Calculation of Transferrin Saturation

$$TRF - Sat [\%] = \frac{IRON (\mu g / dl) \times 79570}{TRF (mg / dl) \times 2 \times 56 \times 10}$$

**Applications for automated systems are available on request**

## Calibration/Controls

For the calibration of automated photometric systems we recommend Greiner-Transferrin-calibrators. These values are traceable on the "IFCC/BCR/CAP-reference material for 15 Plasmaproteins CRM 470".

For internal QC use Greiner Protein-controls.

## Data of Performance

### Range / Linearity

Multi-Point-calibration: The test can, depending on the automated system used, measure Transferrin-concentrations from 3 mg/dl up to 800 mg/dl. At higher concentrations dilute the samples 1+1 with NaCl-solution (9 g/l). Multiply result by 2.

### Prozone Effect

No effect up to 2000 mg/dl.

### Specificity/ Interferences

Greiner Transferrin is specific on human Transferrin. No interference with ascorbic acid up to 30 mg/dl, bilirubine up to 60 mg/dl, hemoglobin up to 1000 mg/dl, lipämia up to 2000 mg/dl triglycerides, and no effect with RF up to 1700 IU/ml.

### Sensitivity / Detection Limit

Lower Detection Limit = 3 mg/dl

### Imprecision

(Ref.: NCCLS = National Committee of Clinical Laboratory Standards)

Within-run precision n = 40	Mean [mg/dl]	SD [mg/dl]	CV [%]
Sample 1	222	5.29	2.38
Sample 2	394	7.25	1.84
Sample 3	543	9.08	1.67

Between day precision n = 40	Mean [mg/dl]	SD [mg/dl]	CV [%]
Sample 1	222	0.91	0.41
Sample 2	394	0.93	0.24
Sample 3	543	7.45	1.37

### Method Comparison

A comparison of Greiner (y) with an established immunoturbidimetric test (x) using 70 samples gave following results:  
 $y = 0.98 x - 0,93 \text{ mg/dl}; \quad r = 0.993.$

A comparison of Greiner (y) with an established nephelometric test (x) using 71 samples gave following results  
 $y = 1.10 x - 16.6 \text{ mg/dl}; \quad r = 0.974.$





## Normal Range

200 – 360 mg/dl (2.0 – 3.6 g/l)

## Literature

1. Wick M, Pingerra W, Lehmann P. Iron metabolism: diagnosis and therapy of anemias. 3<sup>rd</sup> ed. Vienna, New York: Springer Verlag,1996.
2. Fairbanks VF, Klee GG. Biochemical aspects of hematology. In: Burtis CA, Ashwood ER, editors. Tietz Textbook of Clinical Chemistry. 3<sup>rd</sup> ed. Philadelphia: W.B Saunders Company; 1999. p. 1642-1710.
3. Dati F, Schumann G, Thomas L, Aguzzi F, Baudner S, Biennu J et al. Consensus of a group of professional societies and diagnostic companies on guidelines for interim reference ranges for 14 proteins in serum based on the standardization against the IFCC/BCR/CAP reference material (CRM 470). Eur J Clin Chem Clin Biochem 1996;34:517-20.

## SYMBOLS USED

-  For *in vitro* diagnostic medical use
-  Batch Code
-  Use by
-  Temperature limitation