

**Supplementary kit for determination of total iron binding capacity of serum.**

**Principle**

Total iron-binding capacity (TIBC) is evaluated after saturation of the transferrin by an iron solution and adsorption of excess iron on magnesium hydroxide carbonate. After centrifugation iron is measured in the supernatant.

**Reference values**

**Male :** 47-70  $\mu\text{mol/l}$  (2.6-3.9 mg/l, 260-390  $\mu\text{g/dl}$ )

**Female:** 38-61  $\mu\text{mol/l}$  (2.1-3.5 mg/l, 210-340  $\mu\text{g/dl}$ )

It is recommended that each laboratory should assign its own normal range.

**Reagents**

**1. Reagent (R1)**

Iron saturating solution 89.5  $\mu\text{mol/l}$  (5 mg/l)

**2. Reagent (R2)**

Magnesium hydroxide carbonate

One measuring spoon (~ 100 mg)

Adsorbent

**Sample**

Serum free of haemolysis.

**PROCEDURE**

**Working reagent**

The reagent is ready for use and stable at 2-25 °C until the expiry date stated on the label.

**In a centrifugation tube, introduce**

<b>Reagent 1</b>	1 ml
<b>Sample</b>	500 $\mu\text{l}$

Mix and incubate for 5 minute then add:

<b>Reagent 2</b>	1 level measuring spoonful (~100 mg ) of magnesium hydroxide carbonate
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Incubate for a 20 minutes, agitating several times during this period. Centrifuge at 3000 r.p.m. during 10 minutes.

**TIBC determination**

Iron content of the supernatant is measured colorimetrically with the Iron Ferrozine method. Because the serum is diluted when the saturating solution is added, the result must be multiplied by 3 to correct the dilution.

**Notes**

The IRON TIBC kit doesn't contain reagent for the quantitative determination of iron in the supernatant (eg. Ferrozine).

**PERFORMANCES DATA**

The following data were obtained using the Olympus 600 analyzer and the iron ferrozine reagent, code number: 615633

**Linearity**

The test is linear up to 179  $\mu\text{mol/l}$  (1000  $\mu\text{g/dl}$ ) iron concentration.

**Sensitivity**

It is recommended that each laboratory establishes its own range of sensitivity as this is limited by the sensitivity of the spectrophotometer used. Under manual conditions however, a change of 0.001 Abs is equivalent to 0.20  $\mu\text{mol/l}$  (1,12  $\mu\text{g/dl}$ ) iron concentration at 578 nm.

**Precision**

	Reproducibility		
	Average conc. ( $\mu\text{mol/l}$ ).	SD	CV%
<b>Sample I.</b>	20.6	0.510	2.48
<b>Sample II.</b>	34.8	0.424	1.22

**Correlation**

Comparative studies were done to compare our reagent with another commercial Total iron binding capacity assay.

The results from these studies are detailed below.






Correlation coefficient:  $r = 0.9857$   
Linear regression:  $y (\mu\text{mol/l}) = 0.951x - 0.40$   
(x=other commercial reagent, y= own reagent).

**NOTE**

Do not use reagents after the expiry date stated on each reagent container label. Do not use products, test solutions and reagents described above for any purpose other than described herein.

**For in vitro diagnostic use only.**

**The following symbols are used on labels**

-  For in vitro diagnostic use
-  Use by (last day of the month)
-  Temperature limitation
-  Batch Code
-  Code

**Bibliography**

Ramsay W. N. M., *Clin. Chem. Acta*, 2, (1957), 221.