HAEMOGLOBIN

1 x 1000 mL
51011001

INTENDED USE

This reagent is intended for in vitro quantitative determination of Haemoglobin in blood.

- Based on cyanmethaemoglobin method
- Linear up to 20 g/dL

CLINICAL SIGNIFICANCE

A decrease in haemoglobin below normal range is an indication of anaemia. An increase in haemoglobin concentration occurs in haemoconcentration due to loss of body fluid in severe diarrhea and vomiting. High values are also observed in congenital heart disease (due to reduced oxygen supply) in emphysema and also in poly cythemia.

Haemoglobin concentration drops during pregnancy due to haemodilution

PRINCIPLE

The Haemoglobin (oxyhaemoglobin,methemoglobin, Carboxyhaemoglobin) is converted to cyanmethaemoglobin according to the following reactions.

Haemoglobin —(K3 Fe(CN)6)→ Methemoglobin

Methemoglobin —(KCN)→ cyanmethemoglobin

The intensity of the color is proportional to haemoglobin concentration and is compared to known cyan methaemoglobin standard at 540 nm (green filter)

REAGENT COMPOSITION

HAEMOGLOBIN REAGENT	**1 x 1000 mL**
Potassium Phosphate	2.0 mmol/L
Potassium ferricyanide	0.60 mmol/L
Potassium cyanide	0.90 mmol/L
Sodium chloride	1.4 mmol/L
HAEMOGLOBIN STANDARD	**1 x 4mL**
Cyanmethaemoglobin standard con.	60 mg/dL

STORAGE AND STABILITY

The sealed reagents are stable up to the expiry date stated on the label, when stored at room temperature & standard at 2 - 8°C.

LINEARITY

This reagent is linear up to 20 gm/dL.

NORMAL RANGE

It is recommended that each laboratory establish its own reference values.

The following value may be used as guide line.

New born	: 14-24 gm/dL
Adult (male)	: 13.5 – 18 gm/dL
Adult (Female)	: 11.5 – 16.4 gm/dL

PREPARATION AND STABILITY OF REAGENT

The reagent is ready to use.'

PRECAUTION

To avoid contamination, use clean laboratory wares.

Avoid direct exposure of reagent to light. Do not pipette the reagent with mouth.

SAMPLE

Fresh whole blood.

GENERAL SYSTEM PARAMETER

Mode of Reaction	End point
Slope of reaction	Increasing
Wavelength	546nm (530-550nm)
Temperature	30°C
Blank	Reagent
Linearity	20 g/dL
Standard concentration	15 g /dL (60x0.251)
Incubation time	5 min
Sample volume	20 µL
Reagent volume	5000 µL
Cuvette	1 cm light path

*NOTE : Analyzer users directly enter given Factor without running standard.

Factor	35

LABORATORY PROCEDURE

	Blank	Sample
Hb Reagent	5000 µL	5000 µL
Sample	-	20 µL

Mix well and incubate at room temperature for 5 minutes. Measure the absorbance of sample against reagent blank and measure the absorbance of standard directly against blank (distilled water).

CALCULATION

$$\text{Haemoglobin Conc. (gm/dL)} = \frac{\text{Absorbance of sample}}{\text{Absorbance of standard}} \times 60 \times 0.251$$

OR

$$\frac{\text{Absorbance of sample}}{\text{Absorbance of standard}} \times 15$$

$$\text{Where, } 0.251 = \frac{\text{Dilution factor}}{\text{Convertion factor}}$$

$$15 = 60 \times 0.251$$

BIBLIOGRAPHY

1. Drabkin, D.L., et al.; J.Bio.Chem, 98 (1932), 719
2. Zijlstra, N. C.; Clin.Chem.Acta, 5,(1960) 719

SYMBOLS USED ON THE LABELS

SYMBOLS USED ON THE LABELS : IVD IN VITRO DIAGNOSTIC USE | SEE PACKAGE INSERT FOR PROCEDURE | LOT LOT NUMBER | MANUFACTURER'S ADDRESS | MANUFACTURING DATE | EXPIRY DATE | TEMPERATURE LIMIT

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