

HAEMO GB

(Drabkins Reagent- CMG method)

| KIT NAME | KIT SIZE | CAT. NO |
|----------|----------|------------|
| HAEMO GB | 1000 ml | MHGB01000L |



INTRODUCTION

Haemoglobin is the major source of oxygen for various tissue cells and its deficiency leads to the destruction of the tissue cells. Increased levels are found in polycythaemia, congenital cyanotic heart disease, heat stroke and dehydration. Decreased levels are found in all varieties of anemias, resulting from deficiency of iron or folic acid, red blood hemolysis, defective globin synthesis and structural abnormalities.

METHOD PRINCIPLE

Potassium ferricyanide converts the haemoglobin in the sample to methaemoglobin. The methaemoglobin further reacts with potassium cyanide to form a stable cyanmethaemoglobin complex. Intensity of the complex formed is directly proportional to the amount of haemoglobin present in the sample.

KIT CONTENTS

| Reagent Name | MHGB00001L |
|-----------------|------------|
| R1 - HB Reagent | 1000 ml |
| R2 - Standard | 1 vial |

R2-STANDARD is Hemoglobin standard solution: 60 mg/dl. to be stored at 2-8°C

WORKING REAGENT PREPARATION AND STABILITY

The R1 HaemoGB reagents are stable at R.T till the expiry date mentioned on the label. The R2 Hemoglobin is Artificial Standard are to be stored at 2-8°C. Do not freeze the reagents.

SPECIMEN

Whole Blood. Preferably fresh and collected in EDTA.

PROCEDURE

These reagents may be used for manual assay and in several automatic analysers. Applications for them are available on request.

| | |
|-------------|----------------|
| Wavelength | 540 nm |
| Temperature | 20-25°C / 37°C |
| Cuvette | 1 cm |

Pipette into the cuvettes

| Reagent | Blank (B) | Test (T) |
|----------------------|-----------|----------|
| R1 HB Reagent | 5000 µl | 5000 µl |
| Sample (Whole Blood) | | 20 µl |

Mix well and incubate at R.T. (25°C) for at least 3 min. Measure the absorbance of the Test Sample (Ans. T) against the Blank. The final colour is very stable.

CALCULATION

Hemoglobin concentration = Abs.(T) x 36.8

MEASUREMENTS ON COLORIMETERS

On colorimeters where the exact wavelength of 540 nm (Hg 546 nm) is not available the absorbances have to be taken on a yellow green filter.

A cyanmethaemoglobin standard (HAEMO GB Haemoglobin Standard) available along with HAEMO GB reagent which has to be used. The absorbance of the Standard (Abs.S) is taken against deionised water and noted.

The test procedure remains the same as give before.

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CALCULATIONS ON COLORIMETERS

$$\text{Haemoglobin in g/dl} = \frac{\text{Abs.T}}{\text{Abs.S}} \times \frac{251}{1000} \times 60$$

Where

251 is the Dilution Factor i.e Total Reaction Vol. (5.02 ml) / Sample Vol. (0.02ml).

1000 is the multiplication Factor to convert mgs. to grams.

60 is the Concentration of the HAEMO GB standard in mg %.

REFERENCE VALUES

| | |
|------------------------|---------------|
| New born | 16 to 25 g/dl |
| Infants | 11 to 14 g/dl |
| Children upto 10 years | 12 to 16 g/dl |
| Male | 12 to 18 g/dl |
| Female | 12 to 16 g/dl |

It is recommended for each laboratory to establish its own reference ranges for local population.

PERFORMANCE CHARACTERISTICS

Linearity: up to 20 g/dl

NOTE

For measuring low haemoglobin concentrations, which may be apparent on seeing the whole blood sample, use 0.05 ml of the whole blood as sample; the multiplication factor, in this case, on analyzers will be 14.8 instead of 36.8.

On colorimeters, using 0.05 ml of whole blood as a sample, along with the standard, the concentration of the HAEMO GB Std. should be taken as 24 mg % instead of 60 mg % in the calculations.

LITERATURE

Van Kampen E.J., Zijlstra W.G., (1961) Clin. Chem Acta. 6:538
Sir John V. Dacie, Lewis, S.M., Practical Haematology, 8th edition.

SYSTEM PARAMETERS

| | |
|------------------------|---------------------|
| Method | End Point |
| Wavelength | 546 nm |
| Zero Setting | Reagent Blank |
| Temperature Setting | 25° C |
| Incubation Temperature | R.T |
| Incubation Time | 3 mins |
| Delay Time | ---- |
| Read Time | ---- |
| No. of Reading | ---- |
| Interval Time | ---- |
| Sample Volume | 0.02 ml (20 ul) |
| Reagent Volume | 5.0 ml (5000 ul) |
| Standard Concentration | Refer Standard vial |
| Units | g/dl |
| Factor | ---- |
| Reaction Slope | Increasing |
| Linearity | 20 g/dl |



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