

**PRODUCT CODE**  
**CS010**

**INTENDED USE**

Drabkin's reagent is used for the quantitative determination of hemoglobin concentration in whole blood.

**CLINICAL SIGNIFICANT**

Hemoglobin is a protein compound which functions in the transport of oxygen from the lungs to other body tissues. The measurement of iron content in whole blood is one the best method to assess blood hemoglobin. Hemoglobin is a porphyrin-iron (II) which is important for energy metabolism. Cyanmethemoglobin is the most widely accepted method, this is where erythrocytes are lysed by a stromatolytic agent in the presence of a surfactant and this releases their hemoglobin into solution. It is this internationally adapted method that is employed in this procedure. There are some conditions (for example; polycythemia and anemia) which exist that can result in altering normal hemoglobin concentration present in blood, therefore by carrying out this assay will help in the detection of these conditions.

**PRINCIPLE**

Hemoglobin reagent is based on cyanmethemoglobin method that has been adopted as a standard method. In this method, erythrocytes are lysed by a stromalitic agent in the presence of a surfactant and release their hemoglobin into solution. Hemoglobin is oxidized to methaemoglobin by Ferricyanide and the methaemoglobin is converted to cyanmethemoglobin by addition of KCN. The absorbance of cyanmethemoglobin is measured at 540 nm and color intensity is proportional to hemoglobin concentration.

**REAGENT COMPOSITION**

**DRABKIN'S REAGENT, 50 X concentrated...**

Potassium ferricyanide	30 mmol/l
Potassium cyanide	38 mmol/l
Monopotassium phosphate	50 mmol/l
Detergent	25ml/l

**STORAGE AND STABILITY**

Drabkin's Reagent: Store at 15-25°C  
The reagent is stable until the expiration date indicated on the box when stored in the dark at the recommended condition.  
Discard working reagent if the solution is turbid.

**SAMPLE**

Whole blood collected in EDTA

**PREPARATION AND STABILITY OF WORKING REAGENT**

Concentrated Drabkin's Reagent ----- 1 volume  
Deionized Water ----- 49 volume  
Discard the solution if discolored or darkened.  
The working reagent is stable up to 1 month at 15-25°C (do not refrigerate).

**NORMAL RANGE**

Neonates	: 16-25 g/dl
1 year old	: 11-14 g/dl
Children	: 12-16 g /dl
Men	: 14-18 g /dl
Women	: 12-16 g /dl

**PRECAUTION**

1- Extreme care should be taken with the haemoglobin reagents as it contains cyanide which is poisonous. Do not pipette by mouth.  
2-Do not mix with acids. Discard by flushing with large volumes of water.

**PROCEDURE**

Wavelength	:	546nm, 500 nm
Cuvette	:	1 cm light path
Temperature	:	15-25°C
Measurement	:	Against working reagent blank

Pipette into cuvettes	Blank	Sample
Working Reagent	5 ml	5 ml
Sample	--	20 µl

Mix and incubate for 3 min, at room temperature (15-25°C)  
Measure the absorbance of sample against working reagent blank.

The color intensity is stable for 1 hour.  
The reaction mixture should not be exposed to strong light.















**CALCULATION WITH FACTOR**

$$\text{Hemoglobin in g/dl} = A_{\text{sample}} \times 36.77$$

**Linearity**

This reagent is linear up to 20 g/dL

**SYMBOL ON LABELS**

Symbols	Signify	Symbols	Signify
	Catalogue Number		Pack Size
	Expiry Date		Volume
	Storage Condition		Lot Number
	Instruction for Use		In Vitro Diagnostics
	Manufacturing Date		Manufacturer
	Number of Tests		For Single Use Only
	EC Representative		European conformity

**BIBLIOGRAPHY**

1-DRABKIN D.L et al - j. Biol Chem. 1932, 98, 719.  
2-ZIJLSTRA N. C. - Clin. cgim. Acta 1960, 5, 719  
3-INTERNATIONAL COMMITTEE FOR STANDRDISATION IN HAEMATOLOGY - Birt j. Haemat. 1967, 13, 71.

