Glucose

GOD/POD Method

Code : 11018/19/20 (5X100ml/2X500ml/5Ltr.)

(For the analyser/Colorimetric estimation of Glucose in Plasma/Serum & CSF)
In VITRO USE Only.

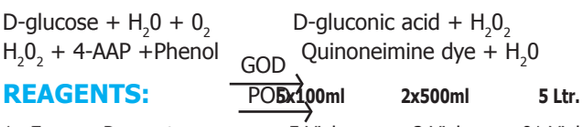
SUMMARY & EXPLANATION OF TEST:

The determination of Glucose is one of the most frequently performed tests in a clinical laboratory. The test based on the reducing property of glucose do not measure true glucose, as there are many interferences. Subsequently other chemical and enzymatic methods were developed. Enzymatic methods are preffered because of their reliability & safety.

This Glucose kit is based on Trinder's method in which Glucose Oxidase and Peroxidase enzymes are used along with the chromogen 4-Aminoantipyrine and phenol. The method is one step, simple & rapid. It does not have any interference due to reducing substances or hemoglobin, etc.,

PRINCIPLE:

Glucose is oxidised by the enzyme Glucose Oxidase (GOD) to give D-gluconic acid and hydrogen peroxide. Hydrogen peroxide in presence of the enzyme Peroxidase (POD) oxidizes phenol which combines with 4-Aminoantipyrine to produce a red colored quinoneimine dye. The intensity of the color developed is proportional to glucose concentration in the sample.



REAGENTS:

	5x100ml	2x500ml	5 Ltr.
1. Enzyme Reagent	5 Vials	2 Vials	01 Vial
2. Buffer Solution	5x100 ml	2X500 ml	5000 ml
3. Standard (100 mg%)	3 ml	3 ml	2 x 3 ml

The reagents are stable at 2 - 8°C till the expire date mentioned on the label.

SAMPLE :

Serum/Heparinised or EDTA Plasma / CSF

REAGENT PREPARATION :

Dissolve one vial of Enzyme Reagent(I) in one bottle of Buffer Solution(2). Mix gently to dissolve. The prepared Working Enzyme Reagent is stable for at least 2 months at 2-8°C.

EXPECTED RANGE:

Random Glucose	: 70-170 mg%
Fasting Glucose	: 70-110 mg%
Post Lunch Glucose	: Upto 170 mg%
CSF Glucose	: 50-80 mg%

LINEARITY:

This method is linear upto 500 mg%. Samples exceeding 500 mg% should be dilute and reassayed. The result has to be multiplied by the dilution factor.

INSTRUCTIONS:

1. Serum/plasma should be separated from the blood cells within 60 min.
2. Sodium Floride is prefered as anti coagulant due to its antiglycolytic activity.

DIRECTIONS FOR USE ON ANALYSERS :

Reaction Type	:	End point with Std.
Wave Length	:	505 nm (Green Filter)
Incubation Temp	:	37°C
IncubationTime	:	10 min.
Sample Volume	:	10 µl
Reagent Volume	:	1 ml
Light path	:	1 cm
Standard	:	100 mg%
Linearity	:	500 mg%
Unit	:	mg%

PROCEDURE:

Pipette into clean, dry tubes labelled Blank (B) Standard (S) and Test (T) and add the reagents in the following order.

	B	S	T
Working Enzyme Reagent (ml)	1.0	1.0	1.0
Distilled Water (ml)	0.01	—	—
Standard (ml) .	—	0.01	—
Serum/Plasma/CSF (ml)	—	—	0.01

Mix well and incubate at 37°C for 10 min. or at R.T. for 20 min. Measure the absorbance of Test (T) and Standard (S), against Blank (B) on a photocolorimeter with green filter or on a spectrophotometer at 505 nm.

CALCULATIONS:

$$\text{Glucose in mg\%} = \frac{\text{A of (T)}}{\text{A of (S)}} \text{ X 100 (Std. conc)}$$

NOTES:

★ Due to variations in inter - laboratory assay conditions, instruments and demography, it is recommended that each laboratory should establish its own normal range. To ensure adequate quality control, each run should include a normal and abnormal assayed controls. The assigned value of the control must be confirmed by this methodology.

★ Final diagnosis should be based on a co-relation of test results with other clinical observations / Diagnostic tools.

BIBLIOGRAPHY:

1. Trinder, P. (1969) Ann. Clin.Biochem. 6:24
2. Henry, R.J. (1963) Standard Methods of Clinical Chemistry.
3. Raabo, E. (1969) Scand, J. Clin. Lab. Invest. 12:402.

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