Asritha
Quality First
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GLUCOSE KIT (DB)

(GOD /PAP method)
For the determination of Glucose in serum, plasma, & CSF
(For In vitro Diagnostic Use Only)

CLINICAL SIGNIFICANCE

Glucose is the major carbohydrate present in blood. Its oxidation in the cells is the source of energy for the body.

INCREASES

Increased levels of glucose are found in diabetes mellitus, hyperparathyroidism, pancreatitis, renal failure.

DECREASES

Decreased levels are found in insulinoma, hypothyroidism, hypopituitarism and extensive liver disease.

METHODOLOGY : GOD / PAP method

PRINCIPLE

$$\text{Glucose} + O_2 + H_2O \xrightarrow{\text{GOD}} \text{Gluconate} + H_2O_2$$

$$H_2O_2 + 4\text{ AAP} + \text{Phenol} \xrightarrow{\text{POD}} \text{Red Quinoneimine dye} + H_2O$$

GOD – Glucose Oxidase 4AAP – 4 Amino Antipyrine
POD – Peroxidase

Intensity of the colour formed is directly proportional to the amount of glucose present in the sample.

GOD ≥ 10 KU/L 4-AAP ≥ 1 mmol/L
POD ≥ 1.5 KU/L Buffer ≥ 180 mmol/L
Phenol ≥ 6 mmol/L Stabilizers and Activator

GLUCOSE STANDARD – 100mg/dl

STORAGE / STABILITY

Enzyme Reagent and standards are to be stored at 2-8°C and are stable till the expiry date mentioned on the labels. Buffer can be stored below 30° C. Store the reconstituted reagent / working reagent at 2-8° C.

WORKING REAGENT PREPARATION

Dissolve one vial of Glucose reagent (A_1) in 100 ml (for 5x100ml), and 500 ml for (2 x 500 ml) of Diluent Reagent (A_2). Mix gently. This working reagent is stable for **6 months** when stored in dark at 2-8°C.

SAMPLE MATERIAL

Serum, plasma, CSF, Glucose is reported to be stable in the sample for 7 days when stored at 2-8°C.

ASSAY PARAMETERS

Reaction	End point	**Interval**	-
Wavelength	505 nm	**Sample Vol.**	0.01 ml
Zero Settings	Reagent blank	**Reagent Vol.**	1.0 ml
Incub. Temp	37°C / R.T	**Standard**	100 mg / dl
Incub Time	10 min / 15 min	**Factor**	-
Delay Time	-	**React. Slope**	Increasing
Read Time	-	**Linearity**	500 mg/dl
No. of read.	-	**Units**	mg/dl

ASSAY PROCEDURE

Wavelength / filter : 505 nm (Hg 546 nm) / Green
Temperature : 37°C / R.T.
Light path : 1 cm

Pipette into clean dry test tubes labelled as Blank (B), Standard (S), and Test (T):

Addition Sequence	B (ml)	S (ml)	T (ml)
Working Reagent (A1)	1.0	1.0	1.0
Glucose Standard (S)	-	0.01	-
Sample	-	-	0.01

Mix well and incubate at 37°C for 10 min or at R.T.(25°C) for 15 min. Measure absorbance of the Standard (Abs.S) and Test Sample (Abs.T) against Blank within 60 min.

CALCULATIONS

$$\text{Glucose in mg/dl} = \frac{\text{Abs.T}}{\text{Abs.S}} \times 100$$

LINEARITY

This procedure is linear upto 500 mg/dl. If value exceed this limit, dilute the serum with normal saline (NaCl 0.9%) and repeat the assay. Calculate the value using proper dilution factor.

NOTES

To avoid glycolysis the serum should be separated from the clot as soon as possible, and plasma should be collected in an EDTA + fluoride bulb (0.5 mg + 1 mg per ml of blood).

QUALITY CONTROL

To ensure adequate quality control each run should include assayed Normal and Abnormal controls.

NORMAL REFERENCE VALUES

Serum/ Plasma	Fasting	:	70-110 mg/dl
Post prandial		:	Upto 150 mg/dl
CSF		:	50-80 mg/dl

It is recommended that each laboratory establish its own normal range representing its patient population.

REFERENCES:

A.Trinder, P., (1969) Ann. Clin. Biochem. 6:24

PRESENTATION

PRODUCT CODE	PACK SIZE	GLUCOSE REAGENT (A_1)	DILUENT REAGENT(A_2)	STANDARD (S)
AGL 0612	5 x 100ml	5 Vials x100ml	5 No. x 100ml	5ml
AGL 0613	2 x 500ml	2 Vials x 500ml	2 No. x 500ml	2 x 5ml

PRODUCT FEATURES AT A GLANCE :

1. **Highest linearity 500mg/dl.**
2. **Blank under control.**
3. **Working reagent stability 180 days at 2-8° C.**
4. **Simple 10 minutes End point assay.**
5. **Suitable for colorimeters, Analyzers.**
6. **Convenient pack size 5 x 100 ml, 2 x 500 ml.**

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ASRITHA DIATECH INDIA PVT. LTD.

IN VITRO DIAGNOSTIC REAGENTS

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