

## GLUCOSE KIT (Mono Reagent)

(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

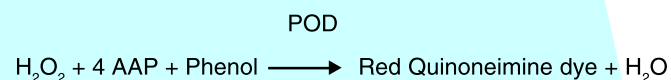
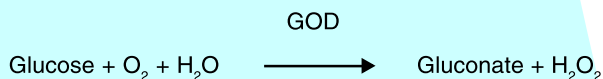
Increased levels of glucose are found in diabetes mellitus, hyperparathyroidism, pancreatitis, renal failure.

### DECREASES

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

**METHODOLOGY** : GOD / PAP method

### PRINCIPLE



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.

### REAGENT COMPOSITION

GOD ≥ 13 KU/L    ≥ 4-AAP ≥ 1 mmol/L

POD ≥ 2 KU/L    ≥ Buffer ≥ 180 mmol/L

Phenol ≥ 6 mmol/L    Stabilizers and Activator

### GLUCOSE STANDARD – 100mg/dl

### STORAGE/STABILITY

Contents are stable at 2-8°C till the expiry mentioned on the labels. Upon storage the Glucose reagent may develop a slight pink colour. This does not affect the performance of the test.

### REAGENT PREPARATION

Reagents are ready to use.

### 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

<b>Reaction</b>	End point	<b>Interval</b>	-
<b>Wavelength</b>	505 nm	<b>Sample Vol.</b>	0.01 ml
<b>Zero Settings</b>	Reagent blank	<b>Reagent Vol.</b>	1.0 ml
<b>Incub. Temp</b>	37°C / R.T	<b>Standard</b>	100 mg / dl
<b>Incub Time</b>	10 min / 15 min	<b>Factor</b>	-
<b>Delay Time</b>	-	<b>React. Slope</b>	Increasing
<b>Read Time</b>	-	<b>Linearity</b>	600 mg/dl
<b>No. of read.</b>	-	<b>Units</b>	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)
Glucose Mono 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.

**CALCULATIONS**

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

**KINETIC PROCEDURE:**

Bring the Glucose Mono reagent to R.T. before use, pipette into test tubes labelled Standard (S) and Test (T) as follows:

ADDITION SEQUENCE	S	T
Glucose Mono Reagent	1.0 ml	1.0 ml
Standard	0.01 ml	-
Specimen	-	0.01 ml

Mix well and read absorbance of S and T at 37°C against distilled water at 505 nm (500-540) kinetically as follows:

- Initial absorbance A0 = Exactly after 20 sec.
- Final absorbance A1 = Exactly 40 sec, after A0.
- Determine Δ Abs for S and T.
- Δ Abs S = Abs S<sub>1</sub> – Abs S<sub>0</sub>
- Δ Abs T = Abs T<sub>1</sub> – Abs T<sub>0</sub>.

**CALCULATIONS**

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

**LINEARITY**

This procedure is linear upto 600 mg/dl. If values exceed this limit, dilute the serum with normal saline (NaCl 0.9%) and repeat the assay, calculate the value using the 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 Mono REAGENT (A <sub>1</sub> )	STANDARD (S)
AGM 0614	3 x 100 ml	3 Nos x 100ml	5 ml
AGM 0615	2 x 500 ml	2 Nos x 500ml	2 x 5 ml
AGM 0649	5 x 100 ml	5 Nos x 100 ml	2 x 5ml

**PRODUCT FEATURES AT A GLANCE :**

1. **One step Direct liquid reagent.**
2. **Two in One End point and Kinetic.**
3. **Specially Stabilized for Tropical Environment.**
4. **Highest linearity 600 mg/dl Endpoint, 1000 mg/dl Kinetic method.**
5. **Shelf Life – 18 months at 2-8° c.**
6. **Convenient pack size 3 x 100 ml, 2 x 500 ml.**



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IN VITRO DIAGNOSTIC REAGENTS

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