

INTRODUCTION

- Infinite** Liquid **STAT** Glucose is a reagent set for determination of **True Glucose, based on enzymatic method**; using Glucose, oxidase and Peroxidase.
- Infinite** Liquid **STAT** Glucose is a **ready-to-use** reagent.
- Infinite** Liquid **STAT** Glucose estimates glucose in just **one minute** using a initial rate method and in **7 minutes** at 37°C or **15 minutes** at R.T. by end point method.
- Infinite** Liquid **STAT** Glucose is **linear** upto 700 mg% glucose for kinetic assay procedure and 500 mg% for endpoint procedure.
- Infinite** Liquid **STAT** Glucose can be used on any **Spectrophotometer, Discrete semiautomated and Automated analyzer**. Programme can be designed for any specific analyzer upon request.
- Sodium Fluoride** (as an anticoagulant upto 10 mg/ml blood) does not effect glucose assay.
- The influence of **Ascorbate, Bilirubin, Antidiabetic drugs and Haemoglobin** is negligible.

PRINCIPLE

Glucose oxidase (GOD) converts glucose to gluconic acid. Hydrogen peroxide formed in this reaction, in presence of Peroxidase (POD), oxidatively couples with 4-aminoantipyrine and phenol to produce red quinoneimine dye. This dye has absorbance maximum at 505 nm. (500-550 nm). The intensity of the colour complex is directly proportional to the concentration of glucose in specimen.



REAGENT STORAGE & STABILITY & HANDLING

The kit should be stored at 2-8°C and is stable till the expiry date indicated on the label.

The reagent and standard are ready-to-use and are stable till expiry when stored at 2-8°C. **DO NOT FREEZE THE REAGENT.**

The reagent should be stored only in the amber bottle provided to protect it from direct light. This is critical because the reagent is light sensitive (auto oxidation of chromogen system by light and air). Before use swirl in the reagent gently. **DO NOT SHAKE VIGOROUSLY.**

Over time, the reagent may develop a light pink colour, this is expected and does not affect the reagent performance. Discard the reagent if the absorbance of the same exceeds 0.300 O.D. against distilled water at 505 nm.

Contamination of the reagent should be strictly avoided. Should the reagent develop turbidity discard the reagent.

COMPONENTS & CONCENTRATION OF WORKING SOLUTION

Component	Concentration
• Phosphate Buffer, pH 7.0	170 mmol/l
• Glucose oxidase	15000 IU/l
• Peroxidase	1500 IU/l
• 4 - amino antipyrine	0.28 mmol/l
• Phenol	16 mmol/l
• Stabilizers and inactive ingredients	

SPECIMEN COLLECTION & PRESERVATION

Blood should be collected in a clean dry container. Serum or plasma should be separated from the cells at the earliest possible (within 30 minutes), as the rate of glycolysis is approximately 7 mg% per hour at room temperature.

For plasma separation following anticoagulants may be used.

• EDTA	2 mg/ml of blood
• CITRATE	6 mg/ml of blood
• HEPARIN	200 IU/ml of blood
• OXALATE	3 mg/ml of blood
• SODIUM FLUORIDE	10 mg/ml of blood

Sodium Fluoride is preferred as anticoagulant due to the antiglycolytic activity. Higher concentration of Sodium fluoride i.e. more than 10 mg/ml blood should be avoided as it may inhibit the colour development.

Glucose is stable for 24 hours in neatly separated plasma and serum if the estimation is not possible within 24 hours then the specimen should be preserved at -10°C and should be used within 30 days.

PROCEDURE FOR END-POINT

- Reaction type End-Point
- Reaction time 7 mins. at 37°C / 15 mins. at R.T. (25-30°C)
- Wavelength 505 nm. (500 - 550 nm.)
- Zero setting with Reagent Blank
- Blank absorbance limit < 0.300 Abs.
- Sample volume 0.01 ml (10 µl)
- Reagent volume 1.0 ml
- Standard concentration 100 mg%
- Linearity 500 mg/dl

Manual assay procedure

Prewarm at room temperature (25-30°C) the required amount of reagent before use.

Perform the assay as given below :

1.0 ml procedure

	Serum / Plasma	Standard	Blank
	0.01 ml	0.01 ml	—
Reagent	1.0 ml	1.0 ml	1.0 ml

Incubation

Incubate the assay mixture for 7 minutes at 37°C or 15 minutes at room temperature (25-30°C). After completion of incubation period measure the absorbance against blank at 505 nm. Final colour is stable for two hours if not exposed to direct light.

Calculation:

① With standard

$$\text{Conc. (mg\%)} = \frac{\text{Absorbance of Sample}}{\text{Absorbance of Standard}} \times 100$$

② With factor for wavelength range : 500 - 510 nm.

$$\text{Conc. (mg\%)} = 269 \times \text{Absorbance of Sample}$$

