GLUCOSE LS

PRINCIPLE

The substrate D-Glucose is oxidsed by Gucose Oxdase to form Gluconic Acid and Hydrogen Peroxide .The hydrogen peroxide so generated oxidises the chroniogen system consisting of 4-AniinoAntpyrine and Phenolic compound to a red quinonemine dye . The intensity of the color produced is propoional to the Glucose concentration and is measured at 505 nm (490.530nm) or with Green titer.

D-Glucose → Gluconic Acid + H_20

$2H_20_2$+ Phenol + 4 Aminoantipyrine → Red Quinonemine+H_20

CLINICALSIGNIFIBANCE

Glucose estimation in serum or plasma is pernod for the diagnosis and follow up of Diabetes Metitus. ln a normal healthy individual the fasting blood glucose level 5 between 70-110 mg/dl .This level may increase up to 500 mg/dl or more it diabetic person. This increase in Glucose level is referred to as Hyperglycemia. This occurs mainly due to deficiency of lnsulin. Slight increases are also found due to hyperactivity of the Pituitary, Thyroid and Adrena glands. Hypoglycemia is an octagonally encountered problem due to hormonal disorders hikeHypothyroidism.

SAMPLE COLLECTION & STORAGE

- ✓ Seruni/Plasma is preferred.
- ✓ Seruni/Plasnia should be separated within 30 minutes of collection to prevent Glycolysis.

PRECAUTIONS

- GLUCOSE LS kit is for in Vitro diagnostic use only
- Bring all reagents to room temperature before use.

KIT CONTENTS & STORAGE

EnzyemReagent	5x100ml	4x250ml	20x100ml	1x250
Glucose standard(100mg/dl)	1x2ml	1x2ml	20x1ml	1x1ml

All reagents are ready to use to be stored at 2-8°C and table till expiry date mentioned on the lable.

REAGENT PREPARATION

All reagents are ready to use

SYSTEM PARAMETERS

Reaction Type	End point with Standard
Wave length	505 nm
Flow Cell Temp	37°C
Working Reagent	1.0 ml
Sample Volume	10 µl
Standard Concentration	100
Units	mg/d L
Incubation	10 minutes
Zero Setting	Reagent Blank

PROCEDURE

Pipette in a clean dry test tubes labeled as Blank (B), Standard (S), and Test(T)

	B	S	T
Enzyme Reagent	1.0ml	1.0ml	1.0ml
Standard		10 µl	
Sample			10µl

Mix well and keep at 37°C for **10 minutes or at 20 minutes** at RT. Measure the absorbance of Test (T) and Standard(S) against reagent blank on photometer using Green filter or on a spectrophotometerat 505 nm

CALCULATIONS

Conc of Glucose in serum (mg/dl) = (Abs of Test/Abs of standard) x Conc of Std

LINEARITY

This method is linear up to 600 mg/dl. Samples exceeding 600 mg/dl should be diluted and re-assayed. The result has to be multiplied by the dilution factor

NORMAL RANGE

Fasting : 70 110 mg/dl

Post Prandial/Random : up to 140 mg/dl

Due to variation in inter-laboratory assay conditions instruments and demography it is recommended that each laboratory should establish its own normal range.

Bibliography

1. Trinder P.Ann. Cl. Biochem, 624(1969)
2. Tietz NW. Fundamentals of Clinical Chemistry 2nd Edition. W.B. Saunders Co., Toronto(1982)