ESTROM GLUCOSE (Lypho)

(GOD POD Method)

ANGSTROM BIOTECH PVT. LTD

This reagent kit is for quantitative estimation of Glucose in serum or plasma.

PRINCIPLE:

The substrate βD-Glucose is oxidised by glucose oxidase to form gluconic acid and hydrogen peroxide. The hydrogen peroxide so generated oxidises the chromogen system consisting of 4-Amino antipyrine and phenolic compound to a red quinoeimine dye. The intensity of the color produced is proportional to the glucose concentration and is measured at 505nm (490-530 nm) or with green filter.

$$GLUCOSE + 0_2 \xrightarrow{GLUCOSE\ OXIDASE} GLUCONIC\ ACIDS + H_2O_2$$

$$H20_2 + PHENOLICCOMPOUND + 4AMINO\text{-}ANTIPYRINE \xrightarrow{PEROXIDASE} RED\ QUINOEIMINE + H_2O$$

CLINICAL SIGNIFICANCE:

Glucose estimations in serum or plasma are performed for the diagnosis and follow up of diabetes mellitus. In a normal healthy individual the fasting blood glucose level is between 70 to 110 mg/dl. This level may increase upto 500 mg/dl or more in a diabetic person. This increase in glucose level is referred as hyper glycemia. This occurs mainly due to deficiency of insulin, slight increases are also found due to hyperactivity of the pituitary, thyroid and adrenal glands.

Hypoglycemia is occasionally encountered due to hormonal disorders like hypothyroidism, hypopituitarism etc or due to glucose storage diseases and sometimes due to an overdose of insulin for the treatment of diabetes.

SPECIMEN COLLECTION AND STORAGE:

- Plasma is preferred to serum.
- Plasma should be separated within 30 minutes of collection to prevent glycolysis.
- Sample collected in fluoride, an inhibitor of glycolysis, can be stored for 24 hrs. at 2-8° C.

PRECAUTION:

- Estrom glucose reagent is for Invitro diagnostic use only.

REAGENTS

All the reagents are to be stored at 2-8° C

	No. of Bottles	
	5x100 ml	2x500 ml
Reagent 1 (Enzyme Chromogen)	5	2
Reagent 2 (Phenol) provided separately (May be stored at R.T.)	5	2
Standard (100mg/dl)	1	1

REAGENT RECONSTITUTION:

- **5 x 100 ml:** Dissolve contents of 1 Vial/tablet of Reagent 1 using 100 ml of Reagent 2.
- **2 x 500 ml:** Dissolve contents of 1 Vial/tablet of Reagent 1 using 500 ml of Reagent 2 provided. Mix well label this as 'Working Reagent' store at 2-8°C protected from light.

REAGENT STORAGE & STABILITY:

All the reagents are stable upto to expiry date indicated on the bottle label. 'Working Reagent' is stable for 3 months when stored at 2-8°C.

GENERAL INSTRUMENT PARAMETERS:

Reaction Type	: End Point
Standard Concentration	: 100 mg/dl
Slope of Reaction	: Increasing
Units	: mg/dl
Wavelength	: 505 nm (490-530 nm)
Incubation	: 10 Minutes
Flowcell Temperature	: 37° C
Zero Setting	: Reagent blank
Reagent Volume	: 1.0 ml
Path length	: 1.0 cm
Sample Volume	: 10 µl (0.01 ml)

PROCEDURE:

Allow the sample and reagent to attain room temperature prior to use

Dispense	Blank	Std.	Test
Working Rgt	1.0 ml	1.0 ml	1.0 ml
Standard	-	10µl	-
Sample	-	-	10µl

Incubate at 37° C for 10 minutes. Mix well and read at 505 nm (490-530 nm) or against green filter.

STABILITY OF REACTION MIXTURE:

The colour of the reaction mixture is stable for 2 hrs. when stored at room temperature, protected from light.

LINEARITY:

This method is linear for glucose values up to 500 mg/dl. For sample with values higher than 500 mg/dl, dilute the sample using normal saline and repeat the assay. Apply proper dilution factor while calculation.

CALCULATIONS:

$$\text{Concentration of glucose in sample (mg/dl)} = \frac{\text{Abs. of Test}}{\text{Abs. of Std.}} \times 100$$

REFERENCE VALUE:

Fasting Serum / plasma	: 70 -110 mg/dl.
Post Prandial / Random Sugar	: Up to 140 mg/dl

It is recommended that each laboratory establish its own reference values.

BIBLIOGRAPHY:

- Trinder P.Ann. Clin. Biochem, 624(1969).
- Tietz, N. W. Fundamentals of Clinical Chemistry, 2ND edition W.B. Saunders Co., Toronto to (1982)

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⚠	Attention,see instructions for use		Consult Instructions For Use
IVD	For in vitro diagnostic use only	REF	Catalog #
2°C 8°C	Store between 2-8°C	LOT	Lot Number
	Do not use if package is damaged		Date of Manufacturing
	Manufacturer		Use by