LYPHOZYME

GLUCOSE

(GOD / POD METHOD)

BEACON

Code	Product Name	Pack Size
LP003A	Lyphozyme Glucose	5 x 100 ml
LP003B	Lyphozyme Glucose	2 x 500 ml

INTENDED USE:

The reagent kit is intended for ***"in vitro"*** Quantitative determination of Glucose inSerum/ Plasma. (preferably sodium fluoride).

CLINICAL SIGNIFICANCE:

Glucose is the major carbohydrate present in blood.Its oxidation in the cells is the source of energy for the body. Increased levels of glucose are found in diabetes mellitus, hyperparathyroidism, pancreatitis, renal failure. Decreased levels are found in Insulinoma, hypothyroidism, hypopituitarism and extensive liver disease.

PRINCIPLE:

Glucose is oxsidised to gluconic acid and hydrogen peroxide in the presence of glucose oxidase. Hydrogen peroxide further reacts with phenol and 4-aminoantipyrine by the catalytic action of peroxidase to form a red coloured quinoneimine dye complex. Intensity of the colour formed is directly propotional to the amount of glucose present in the sample.

REACTION:

$$\text{Glucose} + O_2 + H_2O \xrightarrow{\text{Glucose Oxidase}} \text{Gluconic Acid} + H_2O_2$$

$$H_2O_2 + \text{Phenol} + \text{4 aminoantipyrine} \xrightarrow{\text{Peroxidase}} \text{quinonimine} + H_2O$$

CONTENTS:

Reagent 1:Glucose Enzyme Reagent
Reagent 2:Glucose Buffer (Provided Separately)
Reagent 3: Glucose Standard (100 mg/dl)

MATERIALS REQUIRED BUT NOT PROVIDED:-

-Clean & Dry Glassware.
- Laboratory Glass Pipettes or Micropipettes & Tips.
- Colorimeter or Bio-Chemistry Analyzer.

SAMPLES:

Blood should be collected in a clean dry container. Serum or plasma should be seperated from the cells at the earliest possible (within 30 minutes), as the rate of glycolysis is approximately 7 mg% per hour at room temperature. Sodium flouride is preferred as anticoagulant due to its antiglycolytic activity. The higher concentration of sodium flouride ie. more than 10 mg/dl blood should be avoided as it may inhibit the colour development. Glucose is stable fo 24 hours in neatly seperated 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.

PREPARATION OF WORKING REAGENT & STABILITY :

Working Reagent :

Dissolve the content of Reagent 1 in the suitable quantity of Reagent 2 as indicated on label of Reagent 1. Mix the contents gently and allow it to stand for 10 min. for equilibration.

The reconstitute working Reagent is now Ready for use and it is stable for 30 days at 2 -8°C.

The unopened kit is stable till expiry date mentioned on the kit when stored at 2 -8°C away from direct sun light.

GENERAL SYSTEM PARAMETERS:

Reaction type	: End point
Wave Length	: 505 nm. (490-520nm)
Temperature	: 37°C
Incubation	: 10 minutes
Reagent volume	: 1.0 ml
Sample volume	: 10 µl
Standard concentration	: 100 mg/dl
Zero setting	: Reagent blank
Light path	: 1 cm

PROCEDURE:

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

Addition Sequence	B.	S.	T.
Working reagent	1 ml	1 ml	1 ml
Standard	-	10 µl	-
Sample	-	-	10 µl

Mix well and incubate at 37°C for 10 mins. Measure absorbance of the Standard (Abs.S) and Test (Abs.T) against Reagent Blank at 505 nm.

CALCULATION :

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

NORMAL VALUE :

Fasting : 70 - 110 mg /dl
PPBS : Up to 130 mg/dl
Each Laboratory should establish it's own normal range representing its patient population.

LINEARITY :

This procedure is linear upto 600 mg/dl. If values exceeds this limit, dilute the serum with normal saline and Multiply result by dilution factor.

QUALITY CONTROL :

For accuracy it is necessary to run known controls with every assay.

LIMITATION & PRECAUTIONS :

1. Storage condition as mentioned on the kit to be adhered.
2. Do not freeze or expose reagents to high temperature and protect from direct sun light as it may affect the performance of the Kit.
3. Before the assay bring all the reagents to room temperature .
4. Avoid contamination of the reagents during the assay process.
5. Use clean glassware free from dust or debris.
6. Plug the Glucose standard vial immediately after use.

BIBLIOGRAPHY :

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

IVD JAS-ANZ BSCIC ISO 9001 : 2015 BSCIC ISO 13485:2016

REF Catalogue Number | Manufacturer | See Instruction for Use

LOT Lot Number | CONT Content | Storage Temperature

Expiry Date | IVD In Vitro Diagnostics

BEA/24/GLU/LP/IFU-00