BHAT BIOSCAN™ *GLUCOSE-GOD-PAP*

PRINCIPLE:

Glucose is determined after enzymatic oxidation in the presence of glucose oxidase (GOD).The formed H_2O_2 reacts under catalysis of peroxidase (POD) with phenol and 4-aminoantipyrine (4-AAP) to form quinoneimine. The intensity of the color is proportional to the glucose concentration in the sample.

$$\text{Glucose} + O2 + H_2O \xrightarrow{\text{GOD}} \text{Gluconate} + H_2O_2$$

$$H_2O_2 + \text{Phenol} + \text{4-AAP} \xrightarrow{\text{POD}} \text{Quinoneimine}$$

REAGENT COMPOSITION:

1. Glucose monoreagent

2. Glucose standard 100mg/dl

REAGENT PREPARATION:

Reagent is ready to use.

STORAGE & STABILITY:

Store at 2-8^o C, and keep away from light. Unopened reagent is stable until expiry date stated on the label.

SAMPLE:

Unhemolysed serum or heparinised plasma.
Glucose is stable in serum or plasma for:

- 24 hrs at 2-8^o C, if serum or plasma is prepared within in 30 min. after collection.

AUTOMATED PARAMETERS:

Parameter	**Test**
Reaction type	Endpoint (GOD-POD)
Wavelength	505 nm (490-520 nm)
Reaction temperature	37^o C
Incubation	15 min.
Blank	Reagent
Reagent blank limit	< 0.2 O.D
Sample volume	10 µl
Reagent volume	1000 µl
Standard concentration	100mg/dl
Linearity	600mg/dl

PROCEDURE:

Let stand reagents and specimens at room temperature.

Tube	**Blank**	**Standard**	**Sample**
Reagent	1000µl	1000 µl	1000 µl
Standard	-	10 µl	-
Sample	-	-	10 µl
	Mix and Incubate @ 37 ^{0}C for 15min. Read the absorbance at 500 (460-560nm) against reagent blank. Take the readings within 30 min. after incubation period.		

CALCULATIONS:

Calculate the result as follows:

$$\text{Glucose (mg/dl)} = \frac{A_{\text{sample}}}{A_{\text{standard}}} \times 100 \text{mg/dl}$$

EXPECTED VALUE:

Fasting: 75-110mg/dl

Postprandial: upto 140mg/dl

Each lab should optimize its own normal range.

Reference:

1. Trinder PA, An Clin. Biochem. 6,24 (1969)
2. Pileggi R et al. Klin. Wschr. 40,585-589 (1962).