

# Manual Procedure

Automated procedure on request

**Cat. No. 12380** R 2 x 50 ml  
For 100 tests

**Cat. No. 12381** R 6 x 50 ml  
For 300 tests

**Cat. No. 12383** R 4 x 250 ml  
For 1000 tests

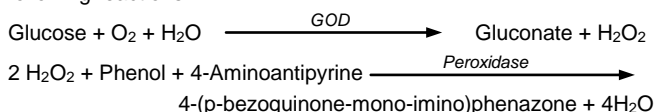
## Glucose GOD/PAP

Enzymatic colorimetric test

### Liquid Reagent

#### Test Principle

Enzymatic colorimetric determination of glucose according to the following reactions:



Glucose is oxidized by glucose oxidase to gluconate and hydrogen peroxide. In the presence of peroxidase, phenol reacts with 4-AAP and hydrogen peroxide to produce a Quinonimin dye, the intensity of the colour produced measured at 505 nm, is proportional to the concentration of glucose in the sample.

#### Concentrations in the test

Reagent			
Phosphate buffer pH = 7.40	120.0	mmol/L	
Phenol	10.0	mmol/L	
Glucose oxidase	≥ 30	KU/L	
Peroxidase	≥ 5	KU/L	
4-Aminoantipyrine	0.3	mmol/L	
Preservative, stabilizer.			
<b>Standard</b> : The Concentration as indicated on vial.			

#### Stability of reagent

**Reagent** : liquid, ready to use.

The reagent is stable up to expiry date given on the label when stored at +2 → +8°C.

**Note**: The reagent should not be used if it has developed turbidity or other evidence of microbial growth.

#### Specimen collection and handling

1. Fresh, non-hemolyzed serum.
2. Non-hemolyzed plasma collected on oxalate, citrate, EDTA, fluoride or heparin.
3. Cerebrospinal fluid (CSF).
4. Glucose in serum is stable for 24 hours at 20 - 25°C and 7 days at 2 - 8°C, after addition of a glycolysis inhibitor (NaF, KF).
5. Serum and plasma must be separated from the red cells promptly to prevent glycolysis. Glucose will decrease approximately 7 % per hour when left in contact with red cells.
6. Use fluoride plasma in case of a delay in analysis.

#### Calibrator / Standard

MediCal U Cat. No. 15011  
Glucose STD. Cat. No. 16111

#### Quality control

Meditrol N Cat. No. 15171  
Meditrol P Cat. No. 15181

#### Procedure

Wavelength	Hg 546 nm (492 - 550 nm)
Spectrophotometer	505 nm
Cuvette	1 cm light path
Temperature	37°C / 20 - 25 °C
Measurement	against blank
Reaction	end point

#### Assay

	Blank	Calibrator / Standard	Sample
Distilled water	10 µl	--	--
Calibrator/ Standard	--	10 µl	--
Sample	--	--	10 µl
Reagent	1000 µl	1000 µl	1000 µl

Mix, incubate for 8 min. at 37 °C or 12 min. at 20 - 25 °C. Read the absorbance (A). The final color is stable for 1 hour.

#### Calculation

$$\text{Conc. Glucose (mg/dl)} = \frac{A_{\text{Sample}}}{A_{\text{Cal./STD.}}} \times \text{Conc. Cal./STD. (mg/dl)}$$

$$\text{mmol/L} \xrightleftharpoons[0.0555 \times]{\times 18} \text{mg/dl}$$

#### Linearity

Up to 500 mg/dl (27.75 mmol/L).

If the result exceeds 500 mg/dl, repeat the test using diluted sample (1+2) with sodium chloride solution (0.9 %) and multiply the result by 3.

#### Interferences

1. Bilirubin up to 20 mg/dl and hemoglobin up to 500 mg/dl have both been found to exhibit negligible interference (< 3 %) in this assay.
2. Grossly lipemic samples may cause falsely elevated glucose values.
3. A number of drugs and substances affect glucose results. see Young, et al.<sup>2</sup>

#### Precaution

The reagent contains sodium azide. Don't swallow. Avoid any contact with skin and mucous membranes. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Upon disposal, flush with large amounts of water to prevent azide build up.

#### Reference range

Serum	Adults	75 - 115	mg/dl
Plasma (venous)	Adults	55 - 115	mg/dl
CSF	Adults	50 - 70	mg/dl

#### References

1. Trinder P., Ann. Clin., Biochem, 6, (1969), 24.
2. Young, DS., Effects of Drugs on Clinical Laboratory Tests, fifth edition 2000, AACC Press, Washington, D.C.
3. Thoma Ed. Med. Verlagsgesellschaft, Marburg.
4. Young et. al., Clin. Chem. 21 :1D, 1975.