

Liquick Cor-GLUCOSE

DIAGNOSTIC KIT FOR DETERMINATION OF GLUCOSE CONCENTRATION



Kit name
Liquick Cor-GLUCOSE "bulk"

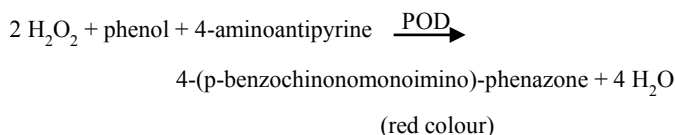
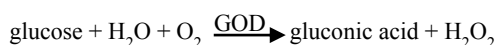
Cat. No
2-275

INTRODUCTION

Glucose is a simple six-carbon sugar. Oxidative metabolism of glucose provides the energy for most cellular processes. Glucose level in the blood is tightly controlled by several hormones. Elevated glucose level is the classic sign of diabetes mellitus. Glucose level abnormalities (hyper- or hypoglycemia) might be caused also by pancreas tumors and diseases of liver, thyroid gland or adrenal glands.

METHOD PRINCIPLE

Colorimetric, enzymatic method with glucose oxidase.



The colour intensity is proportional to the glucose concentration.

REAGENTS

Package

Liquick Cor-GLUCOSE
"bulk"
--*

1-GLUCOSE

*reagent volume is printed on the label.

The reagent when stored at 2-8°C is stable up to expiry date printed on the package. The reagents are stable for 12 weeks on board the analyser at 2-10°C. Protect from light and avoid contamination!

Concentrations in the test

phosphate buffer (pH 7.0)	250 mmol/l
phenol	5 mmol/l
glucose oxidase (GOD)	> 250 µkat/l
peroxidase (POD)	> 20 µkat/l
4-aminoantipyrine (4-AA)	500 µmol/l

Warnings and notes

- Product for in vitro diagnostic use only.
- The reagents are usable when the absorbance is less than 0.300 (read against distilled water, wavelength λ=500 nm, cuvette l=1 cm, at temp. 25°C).

ADDITIONAL EQUIPMENT

- automatic analyzer or photometer able to read at 500 nm (Hg 546 nm);
- thermostat at 37°C;
- general laboratory equipment;

SPECIMEN

EDTA or heparinized plasma / serum, free from hemolysis, cerebrospinal fluid.

Plasma / Serum. Serum and plasma specimens should be separated from cells within 30 minutes after collection.

Plasma specimen which is not assayed immediately after collection should be kept in tubes containing sodium fluoride or sodium iodoacetate. These compounds adding prevent glycolysis and stabilize glucose level.

Serum and plasma can be stored up to 2 days at 4°C.³

Plasma is the specimen recommended for the glucose determination in the blood.⁵

Cerebrospinal fluid. Glucose concentration in cerebrospinal fluid should be measured directly after specimen collection. Cerebrospinal fluid must be analysed simultaneously with a blood sample.

After centrifuge CSF sample can be stored up to 24 hours at 4°C.⁴

Nevertheless it is recommended to perform the assay with freshly collected samples!

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PROCEDURE

The reagent is ready to use.

This reagent may be used both for manual assay and in several automatic analysers. Applications for them are available on request.

Manual procedure

wavelength	500 nm (Hg 546 nm)
temperature	20-25°C / 37°C
cuvette	1 cm

Pipette into the cuvettes:

	reagent blank (RB)	test (T)	standard (S)
1-GLUCOSE	1000 µl	1000 µl	1000 µl

Bring up to the temperature of determination. Then add:

	-	-	10 µl
standard / calibrator	-	-	10 µl
sample	-	10 µl	-

Mix well, incubate for 5 min. at 37°C or 10 min at 20-25°C. Read the absorbance of the test A(T) and standard A(S) against reagent blank A(RB).

Calculation

$$\text{glucose concentration} = \frac{A(T)}{A(S)} \times \text{standard / calibrator concentration}$$

REFERENCE VALUES

	mg/dl	mmol/l
plasma, serum ^{5,6,7}	70 – 99	3.9 – 5.5
cerebrospinal fluid ⁸	40 – 70	2.2 – 3.9

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL

For internal quality control it is recommended to use the CORMAY SERUM HN (Cat. No 5-172) and CORMAY SERUM HP (Cat. No 5-173) with each batch of samples.

For the calibration the CORMAY MULTICALIBRATOR LEVEL 1 (Cat. No 5-174; 5-176), LEVEL 2 (Cat. No 5-175; 5-177) or GLUCOSE STANDARD 100 (Cat. No 5-121), GLUCOSE STANDARD 300 (Cat. No 5-122) are recommended.

The calibration curve should be prepared every 12 weeks, with change of reagent lot number or as required e.g. quality control findings outside the specified range.

PERFORMANCE CHARACTERISTICS

These metrological characteristics have been obtained using automatic analyser Biolis 24i Premium. Results may vary if a different instrument or a manual procedure is used.

- Sensitivity:** 0.41 mg/dl (0.023 mmol/l).

- Linearity:** up to 500 mg/dl (27.5 mmol/l)

If glucose concentration exceeds the range of linearity, dilute sample with 0.9% NaCl and repeat the assay. Multiply the result by the dilution factor.

▪ Specificity / Interferences

Haemoglobin up to 2.50 g/dl, ascorbate up to 62 mg/l, bilirubin up to 20 mg/dl and triglycerides up to 1000 mg/dl do not interfere with the test.

▪ Precision

Repeatability (run to run) n = 20	Mean [mg/dl]	SD [mg/dl]	CV [%]
level 1	96.30	1.37	1.42
level 2	302.61	2.87	0.95

Reproducibility (day to day) n = 80	Mean [mg/dl]	SD [mg/dl]	CV [%]
level 1	96.27	3.58	3.72
level 2	303.38	7.04	2.32

▪ Method comparison

A comparison between glucose values determined at Biolis 24i Premium (y) and at Prestige 24i (x) using 100 samples gave following results:

$$y = 1.0096 x - 1.5851 \text{ mg/dl};$$

$$R = 0.9954 \quad (R - \text{correlation coefficient})$$

TRACEABILITY

GLUCOSE STANDARD 100 and GLUCOSE STANDARD 300 are traceable to the SRM 965A reference material.

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

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Date of issue: 11. 2016.

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11/16/11/16