Cat. No 4-550

DIAGNOSTIC KIT FOR DETERMINATION OF DIGITOXIN CONCETRATION

HC-DIGITOXIN

INTRODUCTION

Digitoxin is a cardiac glycoside used to treat congestive heart failure and certain arrhythmias. It increases the force and excitability of the heart muscle, slows down condution in atrioventricular node and also reduces heart rate. Digitoxin is a glycoside obtained from *Digitalis lanata* and *Digitalis purpurea*. It is characterized by a high absorption from the alimentary tract and very long half-life. It is metabolized in the liver (over 80%). Digitoxin concentration monitoring is recommended because of a narrow therapeutic range and serious side effects: arrhythmia, disturbance of condution. Using digitoxin under the control of concentration enables detection of dangerous side effects before clinical symptoms appear, also it allows to avoid underdosage - "sham therapy".

METHOD PRINCIPLE

Immunoturbidimetric method; inhibition of agglutination.
Increase of absorbance measured at λ = 700 nm is inversely proportional to the concentration of digitoxin in the sample.
Digitoxin which is present in the sample forms immune complexes with specific antibody contained in the first reagent. After adding a second reagent containing polistyrene latex particles coated with digitoxin, agglutination is inhibited in proportion to digitoxin concentration in the sample.

REAGENTS

Package

1-Reagent	2 x 10 ml
2-Reagent	2 x 6 ml

Unopened reagents stored at 2-8°C are stable up to the expiry date printed on the package. After opening the reagents are stable for 21 days on board the analyser at 2-10°C. Protect from light!

Reagents composition

Bis-Tris buffer, monoclonal antibodies to digitoxin, polistyrene latex particles coated with digitoxin, sodium azide (< 0.1%).

Warnings and notes

- Products for in vitro diagnostic use only.
- The reagents should be used by suitably qualified laboratory personnel only in accordance with intended purpose.
- The reagents contain sodium azide as a preservative (< 0.1%). Avoid contact with skin and mucous membranes.Sodium azide can form high explosive metal azide combinations with lead and cooper. Drains should be flushed well with a large amount of water when discarding the solution.
- Mix well Reagent 2 before first use. Avoid foam formation.
- For optimal reagents stability it is recommended to remove them from the system and store in tightly closed bottles at 2-8°C.

SPECIMEN

Serum. Samples may be stored up to 3 days at 2-8 °C. or longer at -20°C. Nevertheless it is recommended to perform the assay with freshly collected samples!
Avoid repeated freezing and thawing. Mix well the samples before analysis.

PROCEDURE

These reagents may be used in automatic analyser Hitachi 911/912.
1-Reagent and 2-Reagent are ready to use.

1-Reagent	Read code by barcode-reader
2-Reagent	Read code by barcode-reader

Wavelength:

Main	700 nm

THERAPEUTIC RANGE

therapeutic concentration	10 – 30 ng/ml (13 – 39 nmol/l)

Some patients achieve the desired therapeutic response at levels outside this range, so it is recommended to consider the need to establish an individual therapeutic ranges for each patient.

QUALITY CONTROL

For internal quality control it is recommended to use the CORMAY DIGITOXIN CONTROLS (Cat. No 5-108) with each batch of samples. For the calibration of automatic analysers systems the CORMAY DIGITOXIN CALIBRATORS (Cat. No 5-114) is recommended.
The calibration curve should be prepared every 7 days, with change of reagent lot number or as required e.g. quality control findings outside the specified range.

PERFORMANCE CHARACTERISTICS

Metrological characteristics may differ from values presented below with the instrument used.

- **Sensitivity / Limit of Detection:** 0.90 ng/ml (1.18 nmol/l).

- **Linearity:** up to 80 ng/ml (104.8 nmol/l) If the digitoxin concentration exceeds 80 ng/ml, dilute the sample 1:5 with saline solution and repeat the assay. The dilution take into account when making the results.

- **Specificity / Interferences**

Haemoglobin up to 12 g/dl, bilirubin up to 19 mg/dl, triglyceride up to 1.1 g/dl do not interfere with the test.

- **Precision**

Reproducibility (day to day) n = 80	Mean [ng/ml]	SD [ng/ml]	CV [%]
level 1	23.7	0.4	2.2
level 2	51.8	1.5	2.6
level 3	36.9	0.7	2.3

- **Method comparison**

A comparison between CORMAY reagent (y) and commercially available assay (x) using 51 samples gave following results:
y = 0.95x + 3.32 ng/ml;
R = 0.9797 (R – correlation coefficient)

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

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