LIQUIZYME

CHOLESTEROL

(CHOD / POD Method)

BEACON

Code	Product Name	Pack Size
LS012B	Liquizyme Cholesterol	2 x 50 ml
LS012C	Liquizyme Cholesterol	6 x 50 ml
LS012G	Liquizyme Cholesterol	1 x 50 ml
LS012H	Liquizyme Cholesterol	10 x 50 ml
LS012I	Liquizyme Cholesterol	20 x 50 ml

Intended Use

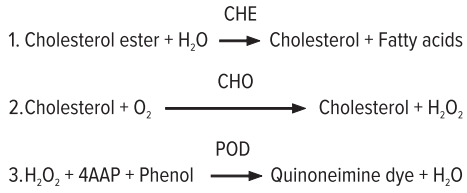
Diagnostic reagent for quantitative in vitro determination of Cholesterol in human serum and plasma.

Clinical Significance

Measurement of serum cholesterol levels can serve as an indicator of liver function, biliary function, intestinal absorption, propensity towards coronary artery disease, thyroid function and adrenal disease. Cholesterol levels are important in the diagnosis and classification of hyperlipoproteinaenias. Stress, age, gender, hormonal balance and pregnancy affect normal cholesterol levels.

Principle

This reagent is based on the formulation of Allain et al and the modification of Roeschlau with further improvements to render the reagent stable in solution.



where:

CHE = Cholesterol Esterase
CHO = Cholesterol Oxidase
4AAP = 4-aminoantipyrine
POD = Peroxidase

1. Cholesterol esters are enzymatically hydrolysed by cholesterol esterase cholesterol and free fatty acids .
2. Free cholesterol, including that originally present, then oxidized by Cholesterol oxidase to cholest-4-en-3-one and hydrogen peroxide.
3. The hydrogen peroxide combines with 4 aminoantipyrine to from a chromophone (quinoneimine dye) which may be quantitated at 505 nm.

Reagent Composition

Reagent 1 : Cholesterol Enzyme Reagent

Goods Buffer	:	>80 mmol/L
Phenol	:	>10 mmol/L
4-aminoantipyrine	:	>0.3 mmol/L
Cholesterol esterase	:	>250 U/L
Cholesterol oxidase	:	>250 U/L
Peroxidase	:	>2250 U/L

Reagent 2 : Cholesterol Standard : 200 mg/dl
Ready to use

Reagent Preparation
Reagent is liquid, ready to use.

Stability And Storage
The unopened reagents are stable till the expiry date stated on the bottle and kit label when stored at +2–+8°C.

Material Required But Not Provided
- Clean & Dry container.
- Laboratory Glass Pipettes or Micropipettes & Tips.
- Colorimeter or Bio-Chemistry Analyzer.

Specimen Collection And Handling
Use serum, plasma (heparin, EDTA).
It is recommended to follow NCCLS procedures (or similar standardized conditions).

Stability In Serum / Plasma :
7 days : at +2 – +8°C
Discard contaminated specimens.

Calibration
Calibration with the Cholesterol standard provided in the kit is recommended.

Quality Control
It's recommended to run normal and abnormal control sera to validate reagent performance.

Unit Conversion
mg/dl x 0.026 = mmol/L

Expected Values
Serum : 130 - 250 mg/dl

It is recommended that each laboratory verify this range or derives reference interval for the population it serves.

Performance Data
Data contained within this section is representative of performance on Beacon system. Data obtained in your laboratory may differ from these values.

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Limit of quantification : 4.2 mg/dl
Linearity : 1000 mg/dl
Measuring range : 4.2 – 1000 mg/dl

Precision

Intra-assay precision Within run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	158.70	2.00	1.26
Sample 2	290.85	4.18	1.44

Inter-assay precision Run to run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	96.80	1.08	1.12

Comparison
A comparison between Cholesterol (y) and a commercially available test (x) using 20 samples gave following results :
y = 0.9942 x + 1.5149 mg/dl
r = 0.999

Interferences
Following substances do not interfere :
haemoglobin up to 5 g/l, bilirubin up to 20mg/dl, triglycerides up to 2000 mg/dl.

Warning And Precautions
For in vitro diagnostic use. To be handled by entitled and professionally educated person.
Reagents of the kit are not classified like dangerous but contain less than 0.1% sodium azide - classified as very toxic and dangerous substance for the environment.

Waste Management
Please refer to local legal requirements.

Assay Procedure
Wavelength : 505 nm
Cuvette : 1 cm

Addition Sequence	Reagent Blank	Standard	Sample
Reagent 1	1000 µl	1000 µl	1000 µl
Standard	-	10 µl	-
Sample	-	-	10 µl
Distilled Water	10 µl	-	-

Mix and incubate 5 min. at +37°C. Measure absorbance of the sample Abs. T and standard Abs. S against reagent blank. The final color is stable for one hour.

Calculation

$$\text{Cholesterol (mg/dl)} = \frac{\text{Abs. T}}{\text{Abs. S}} \times 200$$

Applications for automatic analysers are available on request.

Assay Parameters For Photometers

Mode	End point
Wavelength 1 (nm)	505
Sample Volume (µl)	10
Reagent Volume (µl)	1000
Incubation time (min.)	5
Incubation temp. (°C)	37
Normal Low (mg/dl)	130
Normal High (mg/dl)	250
Linearity Low (mg/dl)	4.2
Linearity High (mg/dl)	1000
Standard Concentration	200 mg/dl
Blank with	Reagent
Unit	mg/dl

References

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3. Flegg HM. Ann Clin Biochem. 1973: 11 : 79.
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6. Roeschlau P, Bernt, E. and Gruber, W. A. Clin. Chem. Clin. Biochem. 1974; 12 : 226.
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Symbols Used On Labels

REF	Catalogue Number		Manufacturer
	See Instruction for Use	LOT	Lot Number
CONT	Content		Storage Temperature
	Expiry Date	IVD	In Vitro Diagnostics

BEA/24/CHO/LS/IFU Ver-03
21/09/2025