HDL CHOLESTEROL

4 x 25 mL
51010001

INTENDED USE

This reagent is intended for in vitro quantitative determination of HDL in serum or plasma.

- Precipitation method, Phosphotungstate magnesium acetate reagent
- Linear up to 125 mg/dL

CLINICAL SIGNIFICANCE

Lipoproteins are the proteins, which mainly transport lipids in the blood stream. They are (HDL) High density lipoproteins, (LDL) Low density lipoproteins, (VLDL) Very low density lipoproteins & chylomicrons. LDL carries cholesterol to the peripheral tissues where it can be deposited & increase the risk of atherosclerotic heart & peripheral vascular disease. Hence high levels of LDL are atherogenic. HDL transports cholesterol from peripheral tissues to the liver & then for excretion, hence HDL has a protective effect. Hence the determination of serum HDL cholesterol is a useful tool to identify patients at risk of developing coronary heart disease.

PRINCIPLE

The chylomicrons, Very low density lipoproteins (VLDL) and Low density lipoproteins (LDL) of serum are precipitated by phosphotungstic acid and magnesium ions.

After centrifugation, High density lipoproteins (HDL) are in the supernatant. HDL content of supernatant is measured by an enzymatic Method.

REAGENT COMPOSITION

HDL CHOLESTEROL R1	**4 x 25 mL**
Phosphotungstate	14 mmol/L
Magnesium Chloride	1 mmol/L
Preservative	
HDL CHOLESTEROL STANDARD	**1 x 4 mL**
HDL Cholesterol concentration	50 mg/dL

STORAGE & STABILITY

The sealed reagents are stable up to the expiry date stated on the label, when stored at 2 - 8°C.

LINEARITY

The reagent is linear up to 125 mg/dL.

If the concentration is greater than linearity (125 mg/dL), dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

NORMAL RANGE

It is recommended that each laboratory establish its own reference values.

The following values may be used as guide line.

HDL Cholesterol

Men	: 35-55 mg/dL
Women	: 45-65 mg/dL

LDL Cholestrol

Suspicious	: 150 mg/dL
Elevated	: 190 mg/dL

PREPARATION AND STABILITY OF WORKING REAGENT

Reagent is ready to use.

PRECAUTION

To avoid contamination, use clean laboratory wares.

Avoid direct exposure of reagent to light.

SAMPLE

Serum / Plasma (free of haemolysis).

GENERAL SYSTEM PARAMETER

Mode of Reaction	End point
Slope of reaction	Increasing
Wavelength I	505 (500 -532 nm)
Wavelength II	630nm
Temperature	37°C
Standard Concentration	50 mg/dL
Blank	Cholesterol Reagent
Linearity	125 mg/dL
Incubation time	5 min
Sample volume	50 µL
Reagent volume	1000 µL
Cuvette	1 cm light path

LABORATORY PROCEDURE

1. PRECIPITATION

Sample	300 µL
HDL reagent	300 µL

Mix well, allow to stand for 10 min. at room temperature, mix again and centrifuge for 10 min, at 4000 rpm.

After centrifugation separate the clear supernatant from the precipitate within 1 hour and determine the HDL Cholesterol concentration using the cholesterol reagent.

2. HDL CHOLESTEROL DETERMINATION :

	Blank	Standard	Sample
Cholesterol Reagent	1000 µL	1000 µL	1000 µL
Standard(HDL)	-	50 µL	
-			
HDL supernatant	-	-	
50 µL			

Mix and incubate for 5 min. at 37°C. Measure the absorbance of the standard & sample against the reagent blank.

CALCULATION

HDL Cholesterol Conc. In mg/dL =

$$\frac{\text{Absorbance of sample}}{\text{Absorbance of standard}} \times N \times 2$$

where, 2 = dilution factor of the sample.
N = Standard concentration (50 mg/dL)

LDL-Chol conc in mg/dL = Total Cholesterol – (HDL Chol. + Triglycerides / 5)

BIBLIOGRAPHY

1. Assmann, G.; Intermist 20 (1979), 559
2. Gordon, T., et al.; Med 62 (1977), 707
3. Friedewald, W. T., et al.; Clin.Chem.18 (1972), 499.

SYMBOLS USED ON THE LABELS

SYMBOLS USED ON THE LABELS : IVD IN VITRO DIAGNOSTIC USE | SEE PACKAGE INSERT FOR PROCEDURE | LOT LOT NUMBER | MANUFACTURER'S ADDRESS | MANUFACTURING DATE | EXPIRY DATE | TEMPERATURE LIMIT

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