

HDL Precipitant



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Diagnostic reagent for precipitation of non-HDL Lipoproteins in tests for determination of High Density Lipoprotein Cholesterol (HDL-C)

Summary

Cholesterol is transported in plasma via lipoproteins. There are four classes of lipoproteins: High Density Lipoproteins (HDL), Low density Lipoproteins (LDL), Very Low Density Lipoproteins (VLDL) and Chylomicrons. LDL is involved in the cholesterol transport to the peripheral cells, HDL is responsible for the cholesterol uptake from the cells. HDL-C has a protective effect impeding plaque formation and shows an inverse relationship to coronary heart disease (CHD) prevalence. In fact, low HDL - C values constitute an independent risk factor. The determination of the individual total cholesterol level is used for screening purposes while for a better risk assessment it is necessary to measure additionally HDL- C & LDL-C.

Method

Precipitation of LDL, VLDL and chylomicrons.

Principle

Chylomicrons, VLDL and LDL are precipitated by adding phosphotungstic acid and magnesium ions to the sample. Centrifugation leaves only the HDL in the supernatant, their cholesterol content is determined using a Cholesterol reagent. The concentration of LDL-C can be calculated from results of a profile including Total cholesterol, HDL-C and triglycerides using the Friedewald equation.

Reagents

R1 - HDL precipitating mono reagent
R2 - HDL Cholesterol Standard - 50 mg/dl

Storage instructions & Reagent stability

The precipitant is stable upto the end of the indicated month of expiry, if stored at 2° - 8°C and contamination is avoided.

Waste Management

Please refer to local legal requirements.

Specimen

Serum or EDTA Plasma. The sample should preferably be of 12-14 hours fasting.

Stability in serum or plasma:
7 days at 2° - 8°C

Assay Procedure

Step 1: Precipitation

Pipette into a centrifuge tube:

Serum / Plasma	0.2 ml
Precipitating Reagent (R1)	0.3ml

Mix well allow to stand at R.T for 5 minutes. Centrifuge at 3000 rpm for 10 minutes to get a clear supernatant.

If the supernatant is not clear {High TGL level} dilute the sample 1:1 with normal saline & multiply the result by 2.

Step 2: Measurement of HDL Cholesterol

Cholesterol reagent from Cholesterol kit is required additionally (not provided inside the HDL precipitant kit) & refer to the procedure mentioned in the cholesterol kit by standardising with the HDL cholesterol standard (R2) provided.

Calculation

HDL Cholesterol

$$\text{HDL-C (mg/dl)} = \frac{\text{A Sample}}{\text{A standard}} \times \text{Cone of Std (50 mg/dl)}$$

LDL Cholesterol

The following Friedewald formula can be used for calculation of LDL Cholesterol. But this formula is reliable only if Chylomicrons are absent in the sample, the triglyceride concentration is < 400 mg/dl and the samples are not derived from patients with type III hyperlipoproteinemia.

$$\text{LDL-C (mg/dl)} = \text{total cholesterol} - \frac{\text{Triglycerides}}{5} - \text{HDL-C}$$

Reference range

Male : 30 -70 mg/dl

Female: 35 - 90 mg/dl

It is recommended that each laboratory should establish their own normal range representing its patient population.

Literature:

1. Allain, CC., etal, (1974) ciin chem. 20:470
2. Rjfai N, Bachorik PS, Albers JJ. Lipids, Lipoproteins & apolipoproteins. Tietz text book of Clin Chemistry, 3rd ed, 1999p.809-61
3. Friedewald WT, Levy RI, Fredrickson DS. Estimation of the concentration of low density lipoprotein cholesterol in plasma, Clin Chem. 1972



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