

## **Serum High-Density Lipoprotein Cholesterol (HDL-C):**

The principle role of HDL in the lipid metabolism is the uptake and transport of cholesterol from peripheral tissues to the liver through a process known as reverse cholesterol transport.

### **The principle:**

This reagent is only used for treatment of specimens before the determination of HDL-C with a reagent for total cholesterol. Low density lipoprotein (LDL), very low density lipoprotein (VLDL) and chylomicrons from specimens are precipitated by phosphotungstic acid (PTA) and magnesium chloride. HDL-C obtained in the supernatant after centrifugation is then measured with a total cholesterol reagent

## Procedure:

Do not treat standard (vial R<sub>2</sub>) enclosed in kit:

<b>Solution</b>	<b>Macro-method</b>	<b>Micro-method</b>
<b>Specimen</b>	<b>1 ml</b>	<b>0.5 ml</b>
<b>Precipitant</b>	<b>100 µl</b>	<b>50 µl</b>

Mix vigorously, let stand for 10 min. at room temperature and centrifuge for 15 min. at 3500-4000 RPM. with BIOLAB total cholesterol CHOD-PAP or equivalent: Let stand reagents and supernatants at room temperature. Calibrate with standard enclosed in the kit or pre- treated series calibrator.

<b>Solution</b>	<b>Blank</b>	<b>Standard</b>	<b>Sample</b>
<b>Reagent</b>	1 ml	1 ml	1ml
<b>DW</b>	25 $\mu$ l	-----	-----
<b>Standard</b>	-----	25 $\mu$ l	-----
<b>Serum</b>	-----	-----	25 $\mu$ l

Mix well the test tubes and let stand for 5 min. at 37°C or 10 min. at room temperature. Record absorbance at 500 nm. (480-520 nm) against the reagent blank.

$$\text{HDL concentration} = \frac{A_{\text{sample}}}{A_{\text{standard}}} \times \text{Standard concentration} \times 1.1$$

1.1= standard remaining undiluted, 1.1 factor takes into account dilution of the specimen during the precipitation step.

# **Serum Low-Density Lipoprotein Cholesterol**

**(LDL-C):**

Serum LDL concentration can be calculated by the following equation

$$\mathbf{LDL = TC - (HDL + TG/5)}$$

**Serum Very Low-Density Lipoprotein (VLDL):**

Serum VLDL concentration was calculated by dividing serum TG/5 .

$$\mathbf{VLDL = TG/5}$$