Pacific Biomarkers
The Value of Expertise

Chylomicron Component Triglyceride

Analyte: Chylomicron Component Triglyceride

Specimen Type: Serum, EDTA Plasma

Optimum Volume: 2.5 mL*

Stability:

2-8 Degrees C	-20 Degrees C	-70 Degrees C
5 days	3 months	2 years

Reporting Units: mg/dL

Method: Ultracentrifugation & Immunoturbidimetric

Biological or Clinical Significance:

The determination of Apolipoprotein A-I and B can help to assess the degree of atherosclerotic risk. Even in borderline cases, which are not usually detected during routine determination of cholesterol, triglycerides, and HDL cholesterol, the Apo A-I/B ratio can serve as an important predictor. Apo A-I and B show their particular strength in the diagnosis of genetic metabolic disorders such as hyperapobetalipoproteinemia, abetalipoproteinemia, etc.

Epidemiological studies have demonstrated a significant negative correlation between blood levels of high density lipoprotein (HDL) cholesterol and coronary heart disease, and some have suggested that measurements of Apo A-I may be as good as, if not better than, measurements of HDL cholesterol for assessment of risk for coronary artery disease. Human plasma HDL contains approximately 55% lipid and 45% protein by weight. Apo A-I, the predominant protein, constitutes approximately 60% of the protein in HDL. Apo A-I is the active component of HDL which is responsible for removal of cholesterol from the aortic smooth muscle cells through its activation of the enzyme, lecithin-cholesterol acyltransferase (LCAT) which catalyzes the esterification of cholesterol. Measurements of Apo A-I in combination with measurements of Apo B (the principal protein of low density lipoprotein) have been useful in identifying individuals which are at risk for developing coronary artery disease (CAD) and in the diagnosis of patients at risk for premature CAD (familial Apo A-I deficiency and Tangier disease).

Levels of Apo A-I are elevated on a genetic basis. Exercise, diet, and various drugs such as niacin and thyroid hormones may also increase levels. Individuals with Tangier disease have an abnormal Apo A-I which is rapidly catabolized along with A-II and HDL. The HDL deficiency is associated with deposition of cholesterol in liver, spleen, lymphoid tissues (including tonsils), and other tissues. Levels of LDL and cholesterol also tend to be decreased. As a result, the acceleration of atherosclerosis is only moderate. Familial hypoalphalipoproteinemia, in contrast, is an autosomal dominant trait associated with definitely increased coronary artery disease.

Principle of Test Method:

The chylomicron determination at PBI using a one-hour ultracentrifugation. The tubes are sliced to remove the chylomicron fraction from the remainder of the lipoproteins. Triglyceride from the whole serum/plasma and the bottom fraction are measured. The difference between these two concentrations is the concentration of triglyceride in chylomicron.

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*2.5 mL allows for a repeat analysis if needed.