

Glycerol, Free

Analyte: Glycerol

Specimen Type: Serum, EDTA Plasma, Heparin Plasma

Optimum Volume: 0.5 mL

Stability:

2-8 Degrees C	-20 Degrees C	-70 Degrees C
1 day	5 days	5.5 months

Reporting Units: mg/dL trig. equivalents

Method: Colorimetric

Biological or Clinical Significance:

Glycerol (Glycerin, glycerine or 1,2,3-propanetriol) is a three-carbon alcohol that contains a hydroxyl group on each of its carbon atoms. Chemically, it is possible to esterify each hydroxyl group with a fatty acid. Glycerol is a precursor for synthesis of triglycerides and of phospholipids in the liver and adipose tissue. When body uses stored fat as a source of energy, glycerol and fatty acids are released into the circulation.

Glycerol concentrations in fresh, fasting serum are usually in the 1 mg/dL range (levels may go up in samples that are not promptly processed and analyzed, or if refrigerated for extended periods). Determination of triglyceride (TG) on a mass basis assumes that the molecular weight of triolein, 885 g/mol, represents the average triacylglycerol molecule in the circulation. Therefore, normal levels of glycerol translate into addition of 5 to 10 mg of TG per deciliter of serum or plasma. In normolipidemic subjects, this difference is relatively insignificant, but at higher TG levels the effect is more substantial and should be accounted for. The levels of TG (and glycerol) are higher in patients with metabolic syndrome and diabetes, as well as a host of genetic conditions or in carriers of some alleles.

Principle of Test Method:

The glycerol assay is an automated enzymic colorimetric method.