

1,5 Anhydroglucitol (Glycomark™)

Analyte: 1,5-Anhydroglucitol

Specimen Type: Serum, Inquire for additional option(s)

Optimum Volume: 0.5 mL

Stability:

2-8 Degrees C	-20 Degrees C	-70 Degrees C
2 weeks	3 years	3 years

Reporting Units: ug/mL

Method: Enzymatic

Biological or Clinical Significance:

1,5-Anhydroglucitol (1,5-AG) is a non-metabolizable glucose analogue (1-deoxy glucose) found in plasma. It is metabolically stable and like glucose it is reabsorbed in the renal tubule. Because of its structural similarity with glucose, reabsorption of 1,5-AG and glucose compete for tubular reabsorption by the kidney, resulting in a net decrease when plasma glucose levels exceed the renal threshold. Therefore, serum 1,5-AG decreases rapidly in people with hyperglycemia. 1,5-Anhydroglucitol is generally decreased in the plasma of diabetic patients not receiving insulin or other treatments for hyperglycemia. Hemoglobin A1c (HbA1c), fructosamine, glycated albumin and 1,5-AG are markers of glycemia that reflect the integration of plasma glucose levels over time. The assay can be used for the intermediate term monitoring of glycemic control in patients with diabetes. HbA1c measurements are reflective of glycemic control occurring 1-2 months before the measurement, whereas the other markers reflect a shorter-term response to changes in glycemia. 1,5-Anhydroglucitol reflects changes in glycemic status over a few days to two weeks. However, for some patients with severe hyperglycemia, the internal pool of 1,5-AG may tend to remain depleted as a result of persistent glucosuria. In these cases, measurement of 1,5-AG may be less indicative of initial recovery following initiation of anti-diabetic treatment.

Principle of Test Method:

The 1,5-AG assay is an automated enzymic method.

References:

Nerby, C. L., Stickle, D. F. 1,5-anhydroglucitol monitoring in diabetes: A mass balance perspective. *Clinical Biochemistry* 2008 Feb;42(3):158-167.