

INTENDED USE : This reagent kit is intended for "*in vitro*" quantitative determination of ALBUMIN concentration in serum.

CLINICAL SIGNIFICANCE : Albumin is a protein that is formed in the liver. Approximately 50-60% of total protein is albumin, the rest is globulin. The albumin helps to maintain normal distribution of water in the body (colloidal osmotic pressure), and also help in the transport of blood constituents such as ions, pigments, bilirubin, hormones, enzymes and drugs. The ration of albumin to globulin is an important indicator of certain disease states. Albumin level is decreased in several liver diseases, malabsorption, diarrhoea, eclampsia and nephrosis. The level is increased in dehydration.

PRINCIPAL : At pH=4.2, albumin bind with bromocresol green to produce a blue-green complex. The change in absorbance at 628 nm co-relates with the concentration of albumin.

REAGENT COMPOSITION :

Reagent 1 : BCG Reagent

Albumin Standard : 4 gm/dl.

MATERIALS REQUIRED BUT NOT PROVIDED :

- Clean & Dry Glassware.
- Micropipettes & Tips.
- Colorimeter or Bio-Chemistry Analyzer.

SAMPLES : Serum free of hemolysis.

STABILITY OF REAGENT : When Stored tightly closed at room temperature protected from light and contaminations prevented during their use; reagents are stable up to the expiry date stated on the label.

WORKING REAGENT : The reagent is ready for use.

ASSAY PROCEDURE :

Test	Blank	Standard	Sample
Reagent	1000 µl	1000 µl	1000 µl
Standard	----	10 µl	----
Sample	----	----	10 µl

Mix and read the optical density (A) after a 5 minute incubation at 37°C.

GENERAL SYSTEM PARAMETERS :

Reaction Type	End Point
Wavelength	630 nm (600-650) nm
Light Path	1 cm
Reaction Temperature	37°C
Blank / Zero Setting	Reagent
Reagent Volume	1000 µl
Sample Volume	10 µl
Incubation Time	5 Minutes
Standard Concentration	4 gm/dl
Low Normal	3.8 gm/dl
High Normal	5.4 gm/dl
Linearity	6 gm/dl

CALCULATION :

$$\text{Albumin Conc. (gm/dl)} = \frac{\text{OD of Sample}}{\text{OD of Standard}} \times \text{Conc. of Standard}$$

LINEARITY : Reagent is Linear up to 6 gm/dl.

Dilute the sample appropriately and re-assay if Albumin concentration exceeds 8 gm/dl. Multiply result with dilution factor.

REFERENCE NORMAL VALUE : 3.8 - 5.4 gm/dl

QUALITY CONTROL : For accuracy it is necessary to run known controls with every assay.

SENSITIVITY / LIMIT DETECTION : The Lower Limit of detection is 0.2 g /dl.

LIMITATION & PRECAUTIONS :

- Storage conditions as mentioned on the kit to be adhered.
- Do not freeze or expose the reagents to higher temperature as it may affect the performance of the kit.
- Before the assay bring all the reagents to room temperature.
- Avoid contamination of the reagent during assay process.
- Use clean glassware free from dust or debris.
- Do not use the reagent if it is hazy or cloudy.

BIBLIOGRAPHY :

E. M. Gindler and J. O. Westgard Clin. Chem., (1973), 6, 4.
J. O. Westgard, M. A. Poquette, Clin. Chem., (1973) 19, 647.

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