ALBUMIN
BCG Method

DIATEK

CLINICAL SIGNIFICANCE :

Albumin is the most abundant plasma protein in human. It accounts for about 60 % of the total serum protein. Albumin plays important physiological roles, including maintenance of colloid osmotic pressure, binding of key substances such as long-chain fatty acids, bile acids, bilirubin, haematin, calcium and magnesium. It has anti-oxidant and anticoagulant effects, and also acts as a carrier for nutritional factors and drugs, as an effective plasma pH buffer. Serum albumin is a reliable prognostic indicator for morbidity and mortality, liver disease, nephritic syndrome, malnutrition and protein-losing enteropathies. High levels are associated with dehydration. Simple, direct and automation-ready procedures for measuring albumin concentration in biological samples are becoming popular in Research and Drug Discovery.

TEST PRINCIPLE :

Albumin + Bromocresol Green ⟶ Green Albumin BCG Complex

BCG Albumin Assay Kit is designed to measure albumin directly in biological samples without any pretreatment. The improved method utilizes bromcresol green that forms a colored complex specifically with albumin. The intensity of the color, measured at 578 nm, is directly proportional to the albumin concentration in the sample.

REAGENTS COMPOSITION :

Succinate buffer (pH 4.20) 140 mmol/L
Bromocresol green 0.26 mmol/L
Detergent 2.0 g/L

Albumin Standard : 4.0 gm/dL

All the components of the kit are stable until the expiration date on the label when stored tightly closed at 2 - 8 ºC, and contaminations prevented during their use. Do not use reagents over the expiration date.

KIT CONTENTS

	CODE No. AL01	CODE No. AL02
Pack size :	(2x50 ml),	(5x100 ml)
Reagent 1		
Albumin Reagent	2x50 ml	5x100 ml
Albumin Standard (4 gm/dL)	1x1 ml,	1x2 ml ,

SAMPLES : Serum or heparinised Plasma
Serum should be separated from blood as soon as possible.

INTERFERENCES

There was no interference observed in test result with Hemoglobin upto 400 mg/dl, Intralipid upto 1000 mg/dl, Bilirubin upto 40 mg/dl and Ascorbic Acid upto 30 mg/dl

ASSAY CONDITIONS:

Wavelength : ..... 578 nm (570 - 620)
Cuvette: ..... 1 cm light path
Constant temperature 37ºC
Reaction ..... End Point
Standard Conc..... 4.0
Linearity..... 6 gm/dl
Unit..... gm/dl
Slope of Reaction..... Increasing
Blanking..... Reagent

PROCEDURE :

Pipette into test tubes labeled Blank (B), Standard (S) and Test (T) as follows:

	B	S	T
BCG Reagent	1.0 ml	1.0 ml	1.0 ml
Albumin Standard		10 l	
Specimen			10 l

Mix and incubate for 5 mint at R.T. Read absorbance of Standard (S) and Test (T) against Blank (B) with 578 nm. The final color is stable for 30 mints at R.T.

CALCULATIONS :

$$\text{Albumin in gm/dL} = \frac{\text{Abs. of T}}{\text{Abs. of S}} \times 4$$

REFERENCE RANGE :

3.5 to 5.2 gm/dL

The above reference range is guideline and all the laboratories must establish their own normal reference range. Final diagnosis should be made with correlation of clinical factors.

PRECAUTIONS :

1. Storage conditions as mentioned on the kit to be adhered.
2. Use clean glassware and microtips while pipetting Albumin Standard. Replug Albumin Standard vial after use
3. Avoid contamination of the reagent during the assay process.
4. Before the assay begins, bring all the reagents to room temperature.
5. If a larger volume of reagent is required for the absorbance reading, requisite volume can be taken in multiples, keeping the same ratio of reagent to specimen/standard.
6. Do not freeze or expose the reagents to high temperature and protect from direct sunlight as it will affect the performance of the kit.
7. Programmes for specific autoanalysers are available on request.
8. For accuracy of results, the assay procedure, reagent preparation and storage has to be meticulously followed.
9. As with all the diagnostic procedures, the physician should evaluate data obtained by the use of this kit in light of other clinical information.

LINEARITY AND DETECTION LIMIT :

The assay is linear up to Albumin concentration of 6 gm/dl. The results of the performance characteristics depend on the analyzer used. If the results obtained were greater than linearity limit, dilute the sample 1 : 2 with Normal Saline and multiply the result by 2.

BIBLIOGRAPHY:

1. Doumas B. et al., Watson. W, Ard and Biggs H.G. Albumin standards and the measurement of serum albumin with bromocresol green, Clin. Chim. Acta, 31, (1971), 87.
2. Doumas B. T. and Biggs H.G., Determination of serum albumin; “Standard Methods of ClinicalChemistry”, Acad. Press N.Y., 7, (1972), 175.
3. Drupt F., Dosage de l'albumine sérique par le vert de bromocrésol Pharm. Biol., 9, (1974), 777.
4. Vassault, A. Grafmeyer, D. Naudin, et al. Protocole de validation de techniques. (Document B, stade 3) Ann. Biol. Clin., (1986),44, 686.

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