ALBUMIN

(BCG) End-Point

BIO LAB DIAGNOSTICS
ISO 9001:2015
ISO 13485:2016
CE

CLINICAL SIGNIFICANCE

High levels are observed in dehydration. Low levels are associated with malnutrition, liver diseases, nephrotic syndrome and protein-loosing enteropathies.

PRINCIPLE

At 4.2 pH, bromocresol green fixes selectively on albumin, producing a **BLUE GREEN** colour. The sensitivity of the reaction is increased by addition of Brij 35. Intensity of colour is proportional to albumin concentration.

Albumin + bromocresol green → Blue Albumin BCG Complex.

REAGENTS COMPOSITION

1. BCG Reagent	**Q.S.**
Bromocresol Green	750 mMol/L
Succinate Buffer pH 4.2	370 mMol/L
Brij 35	trace
2. Standard (Albumin)	**Q.S.**
Value of Albumin Standard	4.0 Gms/dL

Working Reagent Preparation

All Reagents are ready to use.

STORAGE AND STABILITY

BCG (Reagent No. 1)

Stable at 18-25°C till expiry stated on label.

Albumin Standard

Stable at 2-8°C till expiry stated on label.

Do not freeze the Standard.

SAMPLE

Serum or plasma which has no sign of haemolysis. Common anticoagulants have no interference on this assay. ***Avoid citrated plasma.***

SYSTEM PARAMETERS

Reaction	End-Point
Temperature	37°C
Wavelength	620 ± 20 nM
Standard Concentration	4.0 Gms/dL
Absorbance Range	0-2 Å
Cuvette Path Length	1 cM
Incubation Time	3 Mins
Linearity	9.0 Gms/dL
Max. limit of blank rgt.	0.4 Å
Final Colour Stability	1 hour

Reagent Volume	**1000 µL**
Sample Volume	**10 µL**

PROCEDURE FOR AUTO ANALYSERS

Reagent 1 ..... µL	1000
Sample or Standard ..... µL	10

Mix well. Incubate at RT for 3 minutes. Read at 620 nM (600-640nM) or Red filter against blank. Final colour is stable for 1 hour.

NOTE : Programme analyser using system parameters. A specific programme data sheet may be provided for each analyser upon request.

MANUAL PROCEDURE

	Blank	Standard	Test
1. Pipette into 3 Test Tubes			
Reagent No. 1 ..... mL	1.00	1.00	1.00
Standard Reagent No. 2 ..... µL	-	0.02	-
Sample ..... µL	-	-	0.02

2. Mix well. Incubate at RT for 3 minutes.
3. Read at 620 nM (600 - 640 nM) or **RED** filter against blank.
4. The final colour is stable for 1 hour.

RESULTS

Compute

$$\text{Albumin in Gms/dL} = \frac{\Delta \text{O.D. Test}}{\Delta \text{O.D. STD}} \times 4$$

EXPECTED VALUES

4.0 to 5.5 Gms/dL Albumin

As with all diagnostic methods, the final diagnosis should not be made on the result of a single test as well as laboratory diagnosis must be confirmed with clinical manifestations.

LIMITATIONS

Bromocresol green is a pH indicator, therefore, ***invitro*** addition of acid or alkali to the reagent makes false coloration of blank. Pipettes and glasswares must be free of all chemical contaminations.

For values higher than 9 Gms/dL repeat the test with serum diluted in 0.9% sodium chloride solution. Multiply results by the dilution factor applied i.e. multiply by 2 for a 1:1 dilution.

This reagent is linear upto 9 Gms/dL.

WARNING

This reagent system is for ***invitro*** use only. This reagent system contains preservatives and components that have not established for safety if contacted on broken skin or eye or taken orally. In case of such incidents wash off with plenty of water or consult a physician.

QUALITY CONTROL

To ensure adequate quality control, each kit should be tested against a standard control sera. It should be realised that the use of quality control material checks both instrument and reagent function together. Factors which might affect the performance of this test include proper instrument function, temperature control, cleanliness of glasswares and accuracy of pipetting.

It is appropriate to establish each laboratory's accuracy constant and interpret values accordingly. Similarly, laboratory findings should be established by clinical manifestations.

BIBLIOGRAPHY

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