SWEMED DIAGNOSTICS

ALBUMIN REAGENT KIT

(BCG METHOD)

For photometric determination of Albumin in Serum/plasma

For In Vitro diagnostic use only

Ref no.

ALB100

ALB200

Summary

Albumin consists of approximately 60% of the total proteins in the body, the other major part being globulin. It is synthesized in the liver and maintains the osmotic pressure in blood. Albumin also helps in the transportation of drugs, hormones and enzymes. Elevated levels are rarely seen and are usually associated with dehydration. Decreased levels are seen in liver diseases (Hepatitis, Cirrhosis). Malnutrition, Kidney disorders, increased fluid loss during extensive burns and decreased absorption in gastro-intestinal diseases.

Principle

Albumin binds with the dye Bromocresol Green in a buffered medium to form a green colored complex. The intensity of the color formed is directly proportional to the amount of albumin present in the sample.

Albumin+ Bromocresol green Green ⟶ Albumin BCG complex

Kit Contents

Kit size	100ml	200ml
Ref no.	ALB100	ALB200
Albumin Reagent	2×50ml	2×100ml
Albumin Standard	1×3ml	1×3ml
IFU	1	1

Material required not provided

Test tubes, yellow tips, blue tips

Storage & Stability of the Reagents

1. The reagents are stable at 15-25^{0}C (RT) & standard at 2-8^{0}C till the date of expiry, protect from light &contamination is avoided.
2. Do not freeze the reagents.
3. Ensure the standard & specimens are brought to Room Temperature.
4. Ensure the reagents shelf life is valid.
5. Do not use haemolysed &lipemic serum.
6. Always use fresh pipettes & tips.
7. Keep always the caps tightly closed.

Reagent preparation

The reagent and standard are ready to use

Reagent Composition

Reagent	Succinic acid	8.8g/l
	Bromocresol green	108mg/l
	Brij35	4ml/l
Standard	Albumin	4 g/dl

Specimen

Serum, heparin plasma or EDTA plasma.

Specimen collection

1. Fresh, clear, non-hemolysed serum from fasting patients is recommended.
2. The only acceptable anticoagulants are heparin and EDTA.
3. Serum should be separated from the clot.

Storage & Stability of the Specimen

The biological half-life of albumin in blood is 3 weeks.

Stability in serum /plasma: 6 days at 2-8^{0}C

1 day at 15-25^{0}C

1month at -20^{0}C

Warning & Precautions

1. Keep out of reach children. In case of contact with eyes, rinse immediately with plenty of water &seek medical advice.
2. Take off immediately all contaminated clothing.
3. Wear suitable gloves and eye /face protection.
4. Always use safety pipettes to pull the reagents into a pipette.
5. Reagents may contain some non-reactive and preservative components. It is suggested to handle carefully, avoid direct contact with skin and do not swallow.

SWEMED DIAGNOSTICS

Assay Procedure

Wave length	: 630 nm
Temperature	: 37^0 C
Light path	: 10 mm
Measurement	: against reagent blank

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

Mix & incubate for 5mins. at RT and read the absorbance against reagent Blank at 630 nm.

Calculations:

$$\text{Albumin(g/dl)} = \frac{\text{Abs.T}}{\text{Abs.S}} \times 4$$

$$\text{Globulin(g/dl)} = \text{Total Protein (g/dl)} - \text{Albumin (g/dl)}$$

$$\text{A/G Ratio} = \frac{\text{Albumin (g/dl)}}{\text{Globulin (g/dl)}}$$

Linearity

The procedure is linear upto 8g/dl. If value exceed this limit, dilute the sample with distilled water and calculate the value using the proper dilution factor.

Interfering substance

Serum/Plasma

Haemolysis

A haemoglobin level of 800mg/dl results in 13% positive bias.

Lipemia

No significant interference up to an intralipid level of 1000mg/dl.

Reference Range

Serum/Plasma	3.7-5.3g/dl
Globulin	2.3-3.6g/dl
A/G Ratio	1.0-2.3g/dl

"Each laboratory should check if references range are transferable to its own patient population & determine own preference ranges if necessary".

Quick References

Parameter	Albumin
Mode	Endpoint
Wavelength	630nm
Unit	g/dl
Temperature	37^0C
Standard conc.	4 g/dl
Reaction slope	Increasing
Reagent volume	1000µl
Sample volume	10µl
Incubation time	5mins.at RT
Blanking	Reagent blank
linearity	8 g/dl

Literature

1. Tietz, N. Fundamentals of clinical chemistry, Philadelphia, W.B. Saunders, pp 335-337 (1976)
2. Doumas, B., Watson, W., Clin. Chim. ACTA 31, 87 (1971).
3. Webster, S., Clin. ACTA 53, 109 (1974).

Note on symbols and marks

Instructions for use	Use by	Batch number	Reference number
Invitro Diagnostic Medical Device	Date of manufacturer	Temperature limit	Manufacturer

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