

ALBUMIN (BCG Method)



Order Information

Cat. No. Kit Configuration
OMR1162 Reagent: 4 x 40 mL

Summary

Albumin is a critical and important transport protein for different substances in plasma and the principle contributor of the osmotic pressure in plasma. Estimation of albumin in serum/plasma is utilized for the diagnosis and determination of liver related diseases, e.g. liver cirrhosis. Moreover, albumin levels demonstrate the wellbeing and nutritional status of an individual and, consequently, are utilized for identifying deteriorating health and for prognosis in hospitalized patients.

Principle

Albumin binds with Bromocresol Green (BCG) dye in a buffered medium to produce green colored complex which is measured photometrically.

Reagent

Reagent: BCG Reagent
Standard: Albumin (Conc. 3 g/dL)

Storage instruction and reagent stability

The reagent is stable up to the end of the indicated month of expiry on the label, if stored at 2°C– 30°C, protected from direct light and contamination is avoided. Do not freeze the reagent!

Warnings and Precautions

1. Please take the necessary precautions for the use of laboratory reagents.
2. For diagnostic purposes, the results should always be assessed with the patient's medical history, clinical & other findings.
3. Avoid direct contact with skin and do not swallow.
4. In very rare cases, samples of patients with gammopathy might give falsified results.

Waste Management

Refer to local, national / international regulatory requirements.

Reagent Preparation

The reagent and the standard are ready to use.

Materials required but not provided

NaCl solution 9 g/L
General laboratory equipment

Specimen

Serum, Heparinized / EDTA
Plasma Stability: Serum @ 2°– 8°C: 1 month
@ -20°C: 3 months
Avoid repeated freezing.
Discard contaminated specimens.

Assay Procedure

Wavelength : 630 nm (620-640 nm) Red
Filter Temperature: 20°- 30°C
Measurement : Against reagent blank

Pipetting Protocol

Pipette into tubes	Blank	Standard/Sample (Test)
Standard/Sample	-	10 µL
Distilled water	10 µL	-
Reagent	1000 µL	1000 µL

Mix & incubate for 5 min. at 20° - 30°C. Read absorbance of Standard & Sample / Test against reagent blank within 30 min.

Calculation

With Standard or Calibrator (Cal)

$$\text{Albumin (g/dL)} = \frac{\text{Sample}}{\text{Std. /Cal}} \times 3.0 \text{ (Conc. of Std.) /Cal (g/dL)}$$

Quality Control

For internal quality, normal and abnormal controls of Human Matrix should be assayed with each batch of samples.

Each laboratory should establish corrective action in case of deviations in control recovery.

Performance Characteristics

Measuring Range

This test has been developed to determine serum/plasma albumin concentrations within a measuring range from 0.25–6 g/dL. When values exceed this range, samples should be diluted 1:1 with NaCl solution (9 g/L) and the obtained result to be multiplied by 2.

Sensitivity/Limit of Detection

The lower limit of detection is 0.25 g/dL.

Linearity/Limit of Maximum Detection

The higher limit of detection is 6.0 g/dL

Specificity / Interferences

No interference was observed by Ascorbic acid upto 30 mg/dL, Bilirubin upto 40 mg/dL and Triglycerides upto 500 mg/dL.

Linearity

The higher limit of detection is 6.0 g/dL.

Precision

Intra assay n=20	Mean [g/dL]	SD [g/dL]	CV [%]
Sample 1	4.71	0.03	0.71
Sample 2	4.13	0.08	1.84
Sample 3	5.67	0.01	0.14

Inter assay n=20	Mean [g/dL]	SD [g/dL]	CV [%]
Sample1	3.19	0.03	1.06
Sample 2	4.61	0.02	0.36

Biological Reference Interval (BRI)

Neonates	2.5 -3.2 g/dL(25-32 g/L)
Adults	3.5 -5.5 g/dL(35-55g/L)

Note: It is recommended that each laboratory should establish its own reference range based on the patient population.

References

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