ALBUMIN

(BCG Method)

CHEMCount

INTRODUCTION

Albumin is the major serum protein, but is present also in other body fluids: cerebrospinal, pleural and peritoneal. Albumin regulates blood oncotic pressure and serves as amino acids reservoir. Beyond of these functions albumin is very important transport protein – binds and keeps dispersed bilirubin, hormones, vitamins, calcium, magnesium, fatty acids and medicines. Decreased albumin blood level is caused usually by liver or kidney disease, mal-absorption or malnutrition.

METHOD PRINCIPLE

Bromocresol green (BCG) binds with albumin, in succinate buffer (acid medium) to form coloured complex. The absorbance of this complex is proportional to the albumin concentration in the sample. The colour intensity of the formed complex measured at 630 nm is proportional to albumin concentration in the sample.

KIT CONTENTS

R1 - Albumin reagent	2 x 50 ml
R2 - Albumin standard	2 ml

Please refer the standard value mentioned on the vial.

WORKING REAGENT PREPARATION AND STABILITY

The reagent is ready to use.
The reagent is stable up to the kit expiry date printed on the package
when stored at 2-8°C. The reagents are stable for 8 weeks on board analyser at 2-10°C. Protect from contamination.

CONCENTRATIONS IN THE TEST

Succinate buffer pH 3.6 100 mmol/l
Bromocresol green (BCG) 0.15 mmol/l
Stabilizer

WARNINGS AND NOTES

• Product for in vitro diagnostic use only.
• The reagent and standard contain 0.01% sodium azide as a Preservative. Avoid contact with skin and mucous membranes.

ADDITIONAL EQUIPMENT

-Automatic analyzer or photometer able to read at 630 nm
-Thermostat at 25°C or 37°C
-General laboratory equipment

SPECIMEN

Serum free from hemolysis.
Serum should be separated from red blood cells as soon as possible after blood collection.
Serum can be stored up to 3 days at 2-8°C or 6 months at -20°C.
Nevertheless it is recommended to perform the assay with freshly collected samples.

PROCEDURE

These reagents may be used both for manual assay (Sample Start and Reagent Start method) and in several automatic analyzers.
Programme Sheets are available

MANUAL PROCEDURE

Wavelength	630 nm
Temperature	25°C / 37°C
Cuvette	1 cm

Pipette into the cuvette:

REAGENT	Blank (B)	Standard (S)	Test (T)
R1 Albumin Reagent	10 00 µl	1000 µl	1000 µl □
Bring up the temperature of determination. Then add,			
Distilled water	10 µl□		
R2 -Albumin standard		10µl	
Sample			10µl

Mix well and incubate for 1 minute. Read the absorbance of test sample A(T) and standard sample A(S) against reagent blank (B).

CALCULATION

Albumin concentration = A(T) / A(S) x standard concentration

REFERENCE VALUES

Serum	g/dl
Children 0 - 4 years	2.8 - 4.4
Children 4 - 14 years	3.8 - 5.4
Adult	3.5 - 5.2
>60 years	3.2 - 4.6

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL

To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls.

For Fully Automated analyzers by using multicalibrator or albumin standard the calibration curve can plot and the same should be prepared every 8 weeks or with change of reagent lot number.

PERFORMANCE CHARACTERISTICS

• **Sensitivity / Limit of Quantitation:** 0.1 g/dl.

• **Linearity:** up to 6 g/dl. For higher concentration of albumin dilute the sample with 0.9% NaCl and repeat the assay. Multiply the result by dilution factor.

• **Specificity / Interferences**
Haemoglobin up to 3.75 g/dl, ascorbate up to 62 mg/l, bilirubin up to 20 mg/dl and triglycerides up to 500 mg/dl do not interfere with the test.

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

1. Doumas, B.T., Watson W.A., Biggs H.G.: Clin. Chim. Acta: 31, 87-96 (1971).
2. Tietz N.W., ed. Clinical Guide to Laboratory Tests, 3rd ed. Philadelphia, PA: WB Saunders, 22 (1995).
3. Burtis C.A., Ashwood E.R., ed. Tietz Textbook of Clinical Chemistry, 2nd ed. Philadelphia, PA: WB Saunders, 703-4 (1994).
4. Dembinska-Kiec A., Naskalski J.W.: Diagnostyka laboratoryjna z elementami biochemii klinicznej, Volumed, 24-25, (1998).
5. Burtis C.A., Ashwood E.R., ed. Tietz Textbook of Clinical Chemistry, 3rd ed. Philadelphia, PA: WB Saunders, 1800, (1999).

SYSTEM PARAMETERS

Method	End point
Wavelength	630 nm
Zero Setting	Reagent blank
Temperature Setting	25°C / 37°C
Incubation Temperature	R.T
Incubation Time	1 min.
Delay time	----
Read time	----
No. of Readings	----
Interval time	----
Sample Volume	0.01 ml (10 ul)
Reagent Volume	1.0 ml (1000 ul)
Standard Concentration	Refer standard vial
Units	g/dl
Factor	----
Reaction slope	Increasing
Linearity	6 g/dl

IVD

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