Manual Procedure

Automated procedure on request

MEDICHEM MIDDLE EAST
Clinical Chemistry Reagents
Liquid Stable Reagents

Cat. No. 12020 R 2 x 50 ml
For 100 tests

Cat. No. 12022 R 6 x 50 ml
For 300 tests

Albumin

Bromocresol green (BCG) method

Liquid Reagent

Test principle

Albumin is bound by the Bromocresol green (BCG) dye in an acid medium to produce an increase in the blue-green color measured at 628 nm. The color intensity is proportional to the concentration of albumin present in the sample.

Concentrations in the test

Reagent R		
Bromocresol green	0.15	mmol/L
Succinate buffer pH = 4.2	41	mmol/L
Detergent, preservative.		
Standard : The concentration as indicated on vial.		

Stability of reagent

Reagent R: *liquid, ready to use.*
The reagent is stable up to expiry date given on the label when stored at +2 ➔ +25°C.

Note: The reagent should be clear, yellow-green solution. Turbidity or precipitation indicate that the reagent is unsatisfactory and it should be discarded.

Specimen collection and handling

1. Serum, or plasma collected on heparin or EDTA, free from hemolysis.
2. Albumin in serum and plasma is reported stable for 1week at 20-25°C and 1month at 2 - 8 °C, when protected from evaporation.

Calibrator / Standard

MediCal U Cat .No 15011
Albumin STD. Cat .No 16011

Quality control

Meditrol N Cat .No 15171
Meditrol P Cat .No 15181

Procedure

Wavelength	Hg 623 nm (600 - 640 nm)
Spectrophotometer	628 nm
Cuvette	1 cm light path
Temperature	37°C / 20 - 25°C
Measurement	against reagent blank
Reaction	End point

Assay

	Blank	Calibrator / Standard	Sample
Calibrator / Standard	--	10 µl	--
Sample	--	--	10 µl
Reagent R	1000 µl	1000 µl	1000 µl
Mix, incubate for 5 min. at 37°C or 10 min. at 20 - 25°C. Read the absorbance (A). The final color is stable for at least 30 min.			

Procedure notes

1. The reagent should be brought to room temperature before use.
2. Severely lipemic serum should have a serum blank:
   - Add 10 µl sample to 1 ml dist. water and read absorbance against dist. water at 628 nm.
   - Subtract the serum blank absorbance from the test absorbance and use the corrected absorbance in the calculation.

Calculation

$$\text{Conc.}_{\text{Albumin}}\ (\text{g/dl}) = \frac{A_{\text{Sample}}}{A_{\text{Cal./STD.}}} \times \text{Conc.}_{\text{Cal./STD.}}\ (\text{g/dl})$$

$$\mu\text{mol/L} \xrightarrow[144.9 \times]{\times\ 0.0069} \text{g/dl}$$

Linearity

Up to 7.0 g/dl (1014 µmol/L).
Sample with value above 7.0 g/dl should be diluted (1+1) with sodium chloride solution (0.9 %), reassayed, and the result multiplied by 2.
Sample with results below 0.5 g/dl should be determined by immunoassay or electrophoresis.

Interferences

1. Excessive Hemolysis interferes with the test, every 100 mg/dl of hemoglobin corresponds to about 100 mg/dl of albumin.
2. Ampicillin has been found to seriously interfere with BCG method.
3. See Young *et. al*. for a list of other interfering substances.

Precautions

1. Avoid ingestion of the reagent.
2. The reagent is an acid solution. Avoid contact. Flush with water when contact occurs.
3. The reagent contains sodium azide as a preservative. This may react with copper or lead plumbing to form explosive metal azides. Upon disposal, flush with large amounts of water to prevent azide build up.

Reference range

New born	3.8 – 4.2	g/dl
Adultes	3.5 – 5.0	g/dl
< 1 yr.	3.0 – 5.2	g/dl
> 1 yr.	3.5 – 5.2	g/dl

References

1. Doumas, B., Watson, W. Clin. Chim. Acta 31, 87 (1971)
2. Webster, D. Clin. Chim. Acta, 53, 109 (1974).
3. Young, DS., Effects of Drugs on Clinical Laboratory Tests, fifth edition 2000, AACC Press, Washington, D.C.