

**Reagent kit for determination of albumin concentration in serum. Colorimetric bromocresol green method.**

Albumin is a protein that is formed in the liver. Approximately 50-60 % of total protein is albumin, the rest is globulin. The albumin helps to maintain normal distribution of water in the body (colloidal osmotic pressure), and also helps in the transport of blood constituents such as ions, pigments, bilirubin, hormones, enzymes, and drugs. The ratio of albumin to globulin is an important indicator of certain disease states. Albumin level is decreased in several liver diseases, malabsorption, diarrhoea, eclampsia and nephrosis. The level is increased in dehydration.

**Principle**

At pH=4.2, albumin bind with bromocresol green to produce a blue-green complex. The change in absorbance at 628 nm correlates with the concentration of albumin.

**Reference values**

**Serum albumin** 38-54 g/l (3,80-5,40 g/dl)

It is recommended that each laboratory should assign its own normal range.

**Reagents**

**1. Reagent (R1)**

bromocresol green	0,15 mmol/l
succinate buffer pH=4.20	75 mmol/l
Brij 35	7 ml/l

**2. Albumin standard**

Ready for use. For details please check the insert  
Available only in Cat. No.: 41251S and 41252S

**Samples**

Serum free of haemolysis.

**PROCEDURE**

**Working reagent**

The reagent is ready for use.

If the absorbance of working reagent is higher than 0.2 at 578 nm the reagent can not be used.

**Assay conditions**

Wavelength:	628 (578-650) nm
Temperature:	37 °C
Cuvette:	1 cm light path
Read against:	reagent blank
Method:	endpoint (increasing)

**Pipette into cuvette**

	Blank	Standard	
Reagent	1 ml	1 ml	1 ml
Distilled water	10 µl		
Standard		10 µl	
Sample			10 µl

Mix and read the optical density (A) after a 3-minute incubation.

**Calibration:** (37°C, Bromocresol green method)

S1: Distilled water  
S2: Albumin standard Cat. No: 52301 or  
Roche C.F.A.S. (Calibrator for automated system)  
Randox Calibration Serum Level I or  
Randox Calibration Serum Level II

**Calibration frequency**

Two-point calibration is recommended:

- after reagent lot change,
- as required following quality control procedures.

**Calculation**

$$\frac{\Delta A_{sample}}{\Delta A_{standard}} \times C_{standard} = C_{sample}$$

A = Absorbance  
C = Concentration

**Quality control**

A quality control program is recommended for all clinical laboratories. The analysis of control material in both the normal and abnormal ranges with each assay is recommended for monitoring the performance of the procedure. Each laboratory should establish corrective measures to be taken if values fall outside the limits.

**PERFORMANCES DATA**

The following data were obtained using the Olympus 600 analyser (37°C).

**Linearity**

The test is linear up to 69 g/l (6,90 g/dl)

**Sensitivity**

It is recommended that each laboratory establishes its own range of sensitivity as this is limited by the sensitivity of the spectrophotometer used. Under manual conditions however, a change of 0.001 Abs is equivalent to 0.06 g/l (0,006g/dl) albumin concentration at 578 nm.

**Precision**

	Average concentration	SD	CV%
sample I	34.2	0.41	1.19
sample II	32.3	0.52	1.60

**Correlation**

Comparative studies were done to compare our reagent with another commercial albumin reagent. The results from these studies are detailed below.

Correlation coefficient: r=0.9969

Linear regression: y (g/l)= 0.976x+0.653

(x= other commercial reagent, y= own reagent).

**Specificity**

Bilirubin 855µmol/l (50mg/dl), lipid 1000 mg/dl, glucose 55.5 mmol/l (1000mg/dl) and ascorbic acid 2.84 mmol/l (50mg/dl) don't interfere with the assay up to the given levels.

**NOTE**

Do not use reagents after the expiry date stated on each reagent container label. Do not use products, test solutions and reagents described above for any purpose other than described herein.

**For in vitro diagnostic use only.**

**The following symbols are used on labels**

 For in vitro diagnostic use

 Use by (last day of the month)

 Temperature limitation

 Batch Code

 Code

**Bibliography**

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