Albumin

Bromocresol Green. Colorimetric

Product information

24ALB01-UN	**Meditest Albumin**	**6 x 40 mL**
24ALB01-AU	**Meditest Albumin**	**6 x 40 mL**
24ALB01-AB	**Meditest Albumin**	**6 x 40 mL**
24ALB01-ER	**Meditest Albumin**	**6 x 40 mL**
24ALB01-AR	**Meditest Albumin**	**6 x 40 mL**

Purpose

In vitro assay for the quantitative determination of albumin in human serum and plasma.

Summary

One of the most important serum proteins produced in the liver is albumin. This molecule has an extraordinarily wide range of functions, including nutrition, maintenance of oncotic pressure, and transport of Ca++, bilirubin, free fatty acid, drugs, and steroids. Changes in albumin levels indicate liver diseases, malnutrition, skin lesions such as dermatitis and burns, or dehydration1,7,8. Clinical diagnosis should not be based on a single test result, but clinical and other laboratory data should be integrated.

Test Prensibi

In the presence of bromcresol green at slightly acid pH, albumin causes the indicator to change color from yellow-green to green-blue. The intensity of the resulting color is proportional to the concentration of albumin in the[sample1,2,3,4.]

Albümin + BCG ⟶ (pH 4.1) albuminBCG complex

The color intensity of the resulting blue-green color is directly proportional to the albumin concentration in the sample and is measured photometrically.

Reagents - working solutions

R 1	Bromocresol Green pH 4.2	<0.12 mmol/L

Precautions warnings

It is intended for in vitro diagnostic use by healthcare professionals. Follow the normal precautions necessary in handling all laboratory reagents.
Infectious or microbial waste:
Warning: handle waste as potentially biohazardous. Dispose of waste according to accepted laboratory instructions and procedures.
Environmental hazards: Follow all relevant local disposal regulations to determine that it has been disposed of safely. If requested, a safety data sheet can be provided to professional users.

Inhibit foam formation in all reagents and sample types (sample, calibrator and control).
If there is any damage on the package, do not use it Read the user manual carefully before use, do not use the expired assay kit Do not mix different lot reagents.

All samples should be considered epidemic material, please dispose of them in accordance with the laboratory working standard of infectious diseases.
Take the necessary protective measures to prevent users from becoming infected during operation.

Storage and stability

All components of the kit are stable until the expiration date on the label when stored tightly closed at 2-8ºC, protected from light and contamination is avoided during their use.
Do not use reagents after the expiration date. Signs of reactive deterioration: Presence of particles and turbidity.

Sample collection and preparation

Hemolysis-free serum or plasma1: Stability 1 month at 2-8ºC or 1 week at 15-25ºC.

Required Materials (not included in the kit)

1. Cat# 24BIO01-DC Meditest Diachem Calibrator
2. Cat# 24BIO01-DQ Meditest Diacheck Control L1
3. Cat# 24BIO02-DQ Meditest Diacheck Control L2
4. General laboratory equipment
5. Distilled or deionized water

Working Procedure

If you are using a spectrophotometer to perform this test, work with the following procedure. Ask your representative for the application data for fully automatic devices.

1.Test Conditions:
Wavelength: . . . . . 630 nm
Basin: . . . . . 1 cm light path
Temperature: . . . . . 15-25 ºC
2.Set the appliance to zero with distilled water.
3.Place the pipettes in a cuvette.

	Blank	Standard	Sample
R (mL)	1,0	1,0	1,0
Standard (Note [1,2]) (µL)	--	5	--
Sample (µL)	--	--	5

4. Mix and incubate for 10 min at room temperature (15-25ºC).
5. Read the absorbance of samples and Standard (A) against the Gap. The color is stable at room temperature for 1 hour.

Calculation:

$$\frac{\text{(A) Sample (A)Sample Blank}}{\text{(A) Calibrator (A)Calibrator Blank}} \times 5 \text{ (standard conc)} = \text{g/dL}$$

Conversion factor: g/dL x 144.9 = µmol/L

Expected values

3,5 - 5,0 g/dL1.

Limitations

Bilirubin is immiscible up to 110 mg/L, hemoglobin is up to 1 g/L, and lipemic serums are immiscible up to 10 g/L1,4. A list of drugs and other substances involved in the determination of albumin has been reported by Young et[al.5,6]

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Performance characteristics
Measuring range: 0.0349 – 6 g/dL
If the results obtained are greater than the linearity limit, dilute the sample by 1/2 with 9 g/L NaCl and multiply the result by 2.

Precision

	Intra-assay (n=20)		Inter-assay (n=20)	
Mean (g/dL)	5,00	3,71	4,56	3,07
SD	0,02	0,02	0,28	0,18
CV (%)	0,47	0,55	6,20	5,90

Sensitivity: 1 g/dL = 0.2003 ΔA/min
Accuracy: Results obtained using Meditest reagents (y) showed no systematic differences when compared to other commercial reagents (x). The results obtained using 50 samples are as follows:
Correlation coefficient $(r)^2$: 0.99169
Regret Formula y= 0.7177x +0.05267

The results of the performance characteristics depend on the analyzer used.

References

1. Gendler S. Uric acid. Kaplan A et al. Clin Chem The C.V. Mosby Co. St Louis. Toronto. Princeton 1984; 1268-1273 and 425.
2. Rodkey F L. Clin Chem. 1965; 11: 478-487.
3. Webster D. Clin Chem. 1974: Acta 53: 109-115.
4. Doumas BT Clin Chem. 1971: Acta 31: 87-96.
5. Young DS. Effects of drugs on Clinical Lab. Tests, 4th ed AACC Press, 1995.
6. Young DS. Effects of disease on Clinical Lab. Tests, 4th ed AACC 2001.
7. Burtis A et al. Tietz Textbook of Clinical Chemistry, 3rd ed AACC 1999.
8. Tietz N W et al. Clinical Guide to Laboratory Tests, 3rd ed AACC 1995.

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