

ALBUMIN Assay Kit

Cat.No: OttoBC123

Summary & Explanation

Albumin is a carbohydrate-free protein, which constitutes 55-65% of total plasma protein. It maintains oncotic plasma pressure, is also involved in the transport and storage of a wide variety of ligands and is a source of endogenous amino acids. Albumin binds and solubilized various compounds, e.g. bilirubin, calcium and long chain fatty acids. Furthermore albumin is capable of binding toxic heavy metals ions as well as numerous pharmaceuticals, which is the reason why lower albumin concentrations in blood have a significant effect on pharmacokinetics. Hyperalbuminemia is of little diagnostic significance except in the case of dehydration. Hyperalbuminemia occurs during many illnesses and is caused by several factors: Compromised synthesis due either to liver disease or as a consequence of reduced protein uptake, elevated catabolism due to tissue damage (severe burns) or inflammation, malabsorption of amino acids (Crohn's disease), proteinuria as a consequence of nephrotic syndrome; protein loss via the stool (neoplastic disease). In several cases of hyperalbuminemia, the maximum albumin concentration of plasma is 2.5g/dl. Due to the low osmotic pressure of the plasma water permeates through blood capillaries into tissue (edema). The determination of albumin allows monitoring of a controlled patient dietary supplementation and serves also as an excellent test of liver function.

Test Principle

Colorimetric assay, endpoint method

- Sample and addition of R1
- Start of the reaction:

At a pH value of 4.1 albumin displays a sufficiently cationic character to be able to bind with bromocresol green (BCG), any anionic dyestuff, to form a blue-green complex.



The color intensity of the blue-green color is directly proportional to the albumin concentration and can be determined photometrical.

Kit Components

Content	Explanation	Shelf life
Reagent-1	1x30ml	6 months
Calibrator	1x0.5ml	6 months
Q.Control	1x0.5ml	6 months

Available in various sizes.

Storage & Stability

Reagent: Stable up to expiry date when stored capped and at +4°C even after start using

Calibration and Quality Control: Reconstitute the contents of with 0.5 ml of redistilled water . Stable for 2 days when stored at +4°C

Reactivity

Universal

Specimen

Collect serum using standard sampling tubes. Heparin or EDTA plasma. Separate serum or plasma from the clot or cells within one hour and analyze immediately, or store as follows:

Stability: 7 days at +2°C - +8°C, 30 days at - 70°C

Assay Range

0.2g/dl – 6.0 g/dl

Reference Range

Each laboratory is recommended to establish their own reference values.

Analytical Performance

Inter Assay Coefficient of Variation (CV) % 2.4

Intra Assay Coefficient of Variation (CV) % 2.6

Procedure

Wavelength	628nm (±10nm)
Sample or Standard	3µl
Reagent-1	300µl
Zero Adjustment	Reagent blank

Mix and incubate 3 minutes. Read the absorbance against blank within 30 minutes.

Calculation

$$\frac{\text{Abs. Samples}}{\text{Abs. Standard}} \times \text{Calibrator conc} = \text{Albumin conc g/dl}$$

Warning

For in vitro use only

Do not pipette by mouth

Do not use reagents beyond the expiry date.

References

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