PATHOZYME DIAGNOSTICS

# LIQVIPATH ALBUMIN

## (BCG METHOD)

**CAT NO.: ALB**

**Reagent kit for quantitative estimation of Albumin in Serum or Plasma.**

## DIAGNOSTICS SIGNIFICATION:

Albumin is the major plasma protein synthesized in liver. Major functions of albumin include regulation and distribution of extracellular fluid. Albumin contributes to the plasma colloidal osmotic pressure, counteracting the effect of the capillary blood pressure which tends to force water into the tissues. Albumin acts as a transport agent for a wide variety of substances such as hormones, lipids, vitamins, calcium and trace metals. Several procedures are currently available for the determination of albumin which includes dye binding. Due to simplicity, the BCG dye binding method is most commonly used. Albumin is based on modification of the Doumas method with an extended linearity.

## PRINCIPLE:

In an acidic medium, Albumin binds with Bromocresol Green causing Blue-Green BCG Dye. The blue green colour formed is directly proportional to the Albumin present when measured at 630 nm (600-650nm or with RED filter).

Albumin + BCG $\longrightarrow$ BCG- Albumin Complex.

## SPECIMEN COLLECTION:

Fasting, clear serum is preferred. EDTA Plasma also used.

## KIT PRESENTATION:

| Pack Size | 2 X 50 ml | 2 X 100 ml | 5 X 100 ml |
|---|---|---|---|
| Albumin Reagent | 2 X 50 ml | 2 X 100 ml | 5 X 100 ml |
| Albumin Std (5 gm/dl) | 1 X 1 ml | 1 X 1 ml | 1 X 1 ml |

## REAGENT STORAGE AND STABILITY:

Albumin reagent is stable at room temperature until expiry date printed on the label. The standard is stable at 2-8$^0$C until the expiry date indicated on the label.

## ASSAY PARAMETERS:

| | | | |
|---|---|---|---|
| **Reaction** | **: End point** | **Sample Volume** | **: 10 µl** |
| **Wavelength** | **: 630 nm (600-650)** | **Reagent Volume** | **: 1.0 ml** |
| **Zero Setting** | **: Reagent Blank** | **Standard Conc.** | **: 5 gm/dl** |
| **Incub. Temp.** | **: RT** | **Linearity** | **: 10 gm/dl** |
| **Incub. Time** | **: 5 min.** | **Unit** | **: gm/dl** |

## PROCEDURE:

| Pipette into TT | Blank | Standard | Test |
|---|---|---|---|
| Albumin Reagent | 1.0 ml | 1.0 ml | 1.0 ml |
| Albumin Std (5 gm/dl) | -- | 10 µl | -- |
| Sample (Test) | -- | -- | 10 µl |

Mix and incubate at RT for 5 minutes. Read absorbance of test (**T**) and standard (**S**) after 5 minutes against reagent blank at 630 nm (600-650 nm or with RED filter).

## STABILITY OF FINAL REACTION MIXTURE:

The color of the final reaction mixture is stable for 1 hour.

## CALCULATION:

Albumin concentration (gm/dl) = Abs T ÷ Abs S X 5

**Many times a ratio of Albumin to Globulin is considered. For getting the ratio, calculate globulin by using**

**Globulin = Serum Total Protein - Serum Albumin.**

## NORMAL VALUES:

Serum Albumin: 3.6 to 5.4 gm/dl.

## LINEARITY:

The procedure is linear up to **10 gm/dl**. If values exceed this limit, dilute the sample with Distilled Water and repeat the assay. Multiply the result with proper dilution factor.

## REFERENCE:


1. RODKEY F. L., Direct Spectrophometric Determination of Albumin in Human Serum, Clinical Chemistry 11, 478-487 (1965).
2. KAPLAN A., SZABO L.L., Chemistry; Clinical Interpretation and Techniques, 2nd Edition (1983) Lea & Febiger, Philadelphia, P-403.



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PATHOZYME DIAGNOSTICS

# LIQVIPATH TOTAL PROTEIN

## (BIURET METHOD)

**CAT NO.: TOP**

**Reagent kit for quantitative estimation of Total Protein in Serum or Plasma.**

## DIAGNOSTICS SIGNIFICATION:

Total Protein estimation is usually performed in conjunction with other tests such as serum albumin, liver function tests or protein electrophoresis. An albumin/globulin ratio is often calculated to obtain additional information.

Increased levels are found in dehydration, multiple myeloma, chronic liver diseases and chronic infection while decreased levels are found in renal disease, malnutrition, albuminuria and terminal liver failure.

## PRINCIPLE:

In an alkaline medium, Protein reacts with the copper in the biuret reagent causing an increase in absorbance. The increase in absorbance, at 540 nm (530-570 nm or with GREEN/YELLOW filter) due to formation of the coloured complex, is directly proportional to the concentration of Protein.

Protein + $Cu^{++}$ ⟶ Blue - Violet Colored Complex

## SPECIMEN COLLECTION:

Fasting, clear serum is preferred. Plasma also used.
**Report as Total Plasma Protein or Total Serum Protein as per the sample used**.

## KIT PRESENTATION:

| Pack Size | 2 X 50 ml | 2 X 100 ml | 5 X 100 ml |
|---|---|---|---|
| Total Protein Reagent | 2 X 50 ml | 2 X 100 ml | 5 X 100 ml |
| Total Protein Standard | 1 X 1 ml | 1 X 1 ml | 1 X 1 ml |

## REAGENT STORAGE AND STABILITY:

Total Protein reagent is stable at room temperature until expiry date printed on the label. **The standard is stable at 2-8$^0$C until the expiry date indicated on the label.**

## ASSAY PARAMETERS:

| | | | |
|---|---|---|---|
| **Reaction** | **: End point** | **Sample Volume** | **: 20 µl** |
| **Wavelength** | **: 540 nm** | **Reagent Volume** | **: 1000 µl** |
| **Zero Setting** | **: Reagent Blank** | **Standard Conc.** | **: 5 gm/dl** |
| **Incub.Temp.** | **: RT** | **Linearity** | **: 15 gm/dl** |
| **Incub. Time** | **: 5 minutes** | **Unit** | **: gm/dl** |

## PROCEDURE:

| Pipette into TT | Blank | Std | Test |
|---|---|---|---|
| Total Protein Reagent | 1000 µl | 1000 µl | 1000 µl |
| Total Protein Std (5 gm/dl) | -- | 20 µl | -- |
| Sample (Test) | -- | -- | 20 µl |

Mix and incubate at RT for 5 minutes. Read absorbance of Standard (**S**) and Test (**T**) after 5 minutes against Reagent Blank at 540 nm (530-570 nm or with Green/Yellow filter).

## STABILITY OF FINAL REACTION MIXTURE:

The color of the final reaction mixture is stable for 1 hour.

## CALCULATION:

Total Protein concentration (gm/dl) = Abs T ÷ Abs S X 5

**Many times, a ratio of Albumin to Globulin is considered. For getting the ratio, calculate globulin by using**

**Globulin = Serum Total Protein - Serum Albumin**.

## NORMAL VALUES:

Serum Total Protein: 6 to 8 gm/dl.
Each laboratory should establish its own reference range.

## LINEARITY:

The procedure is linear up to **15 gm/dl**. If values exceed this limit, dilute the sample with Distilled Water and repeat the assay. Multiply the result with proper dilution factor.

## REFERENCE:


1. RODKEY F. L., Direct Spectrophometric Determination of Albumin in Human Serum, Clinical Chemistry 11, 478-487 (1965).
2. KAPLAN A., SZABO L.L., Chemistry; Clinical Interpretation and Techniques, 2nd Edition (1983) Lea & Febiger, Philadelphia, P-403



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