ALBUMIN TEST KIT

BCG Dye Binding Method (Colorimetric)

Product Code: 10003	**Reaction Type:** End Point with Standard
Pack Size: 2 x 50 ml	**Matrix Target:** Human Serum & Plasma
Storage Temp: RT (Reagent) / 2-8°C (Standard)	**Wavelength:** 630 nm (Hg 623 nm) Red Filter

INTENDED USE & CLINICAL SIGNIFICANCE

Intended Use: This liquid diagnostic reagent system is configured for the direct quantitative in vitro colorimetric determination of Albumin concentrations in human serum or plasma specimens.

Clinical Significance: Albumin is the most abundant plasma protein produced in the liver. It plays an essential role in maintaining osmotic pressure and possesses the vital ability to bind and transport amino acids, hormones, vitamins, bilirubin, and phospholipids, among many other compounds. Clinical monitoring serves as a baseline check for hepatic and systemic disorders.

METHOD PRINCIPLE

This formulation utilizes a buffered medium at pH 4.2 wherein albumin binds specifically with Bromo Cresol Green (BCG) dye to produce a stable, highly distinct green-colored coordination complex:

> Albumin + Bromo Cresol Green (BCG) → [pH 4.2 Buffer] → Albumin-BCG Green Complex

The static absorbance of the formed colored complex is measured photometrically at 630 nm (or Hg 623 nm). The intensity of the optical absorbance is directly proportional to the absolute albumin concentration present in the specimen.

STEP 1: REAGENT CONFIGURATION & PIPETTING BASELINE

Set up the assay components and calibrate tracking paths on the photometer equipment according to the following analytical manual pipetting matrix:

Reagent/Component Line	Blank	Standard	Test
R1 - BCG Dye Reagent	1000 µl	1000 µl	1000 µl
Albumin Standard (Store at 2-8°C)	—	10 µl	—
Patient Serum / Plasma Sample	—	—	10 µl

Operational Directive: Mix well and allow it to stand at Room Temperature for exactly 1 to 3 minutes. Measure the absolute absorbance of the Standard (A_{Std}) and Test (A_{Test}) against the Reagent Blank (A_{Blank}) on a photo-colorimeter or spectrophotometer.

STEP 2: CALCULATIONS & DATA TRACKING

The analyzer captures the optical density at the conclusion of the incubation period. The system or laboratory operator computes absolute albumin concentration using the programmed multiplier equation:

> Albumin in g/dl = ***(Abs. of Test / Abs. of Std.)*** × ***Standard Concentration***

TECHNICAL PARAMETERS & CLINICAL SUPPORT MATRIX

Universal Safeguards	This diagnostic system is engineered exclusively for professional in vitro diagnostic use. Handle all components and clinical samples following standard biosafety protocols. Contains less than 0.1% sodium azide as a preservative (very toxic/ dangerous for the environment). Discard standard if bacterial/fungal growth or visible contamination is observed.
Expected Range	Albumin: 3.7 to 5.3 g/dl. These values are for orientation purposes; each individual laboratory must establish its own specific standard reference range.
Analytical Linearity	Up to 8.0 g/dl. Samples with concentrations exceeding 8.0 g/dl should be diluted with standard saline and assayed again. Multiply the final results by the appropriate dilution factor.

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