Name  Albumin  
(bromcresol green)

Principle
Albumin binds with bromcresol green (BCG) to produce a blue-green color with an absorbance maximum at 628 nm. The intensity of the color produced is directly proportional to the albumin concentration in the sample.

Clinical Significance
Determination of serum albumin concentration is useful in diagnosing/monitoring a number of clinical disorders. Increased serum albumin is seldom encountered except in cases of dehydration. Decreased serum albumin levels occur most commonly in nephritis and nephrotic syndrome with excessive and prolonged albuminuria. Certain cases of massive ascites, advanced stages of chronic hepatic disease, celiac disease, sprue, diabetes mellitus, etc. may also result in diminished serum albumin values.

Normal Values
3.8-5.1 g/dL

Acceptable Student Result Range
Patient samples should fall within normal value range. Abnormal values should be brought to the attention of the instructor. Control samples must be within ± 2 SD.

Time Frame
30 minutes

Specimen
Serum. Albumin is stable when refrigerated for up to two weeks (2-6°C) or frozen (-20°C) for up to two months. Heparin or EDTA plasma is also suitable for analysis.

Reagents
Sigma Diagnostics Albumin Reagent (BCG) – ready to use. Caution: May cause irritation. Avoid contact with eyes, skin and clothing.

Materials Required But Not Provided
1. Spectrophotometer capable of accurately measuring absorbance at 628 nm.
2. Timer
3. Cuvets
4. Pipets or pipeting devices for accurate delivery of volumes required for the assay. (10μL and 1 mL multiples accepted – see product insert)
5. Protein Standard Solution
6. Controls
Procedure
See product insert if more specific information is required or consult with instructor.

Calculations

Quality Control
Two levels of assayed controls, ie. Monitrol I and Monitrol II.

References
Sigma Diagnostics product insert (Albumin Procedure No. 631)