**Quantitative determination of albumin**

**IVD**

Store at 2-8°C

**PRINCIPLE OF THE METHOD**

Albumin in the presence of bromocresol green at a slightly acidic pH, produces a colour change of the indicator from yellow-green to green-blue. The intensity of the color formed is proportional to the albumin concentration in the sample.

**CLINICAL SIGNIFICANCE**

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. Variation in albumin of Ca++ and contaminations prevented during their use. All the components of the kit are stable until the expiration date on the label when stored tightly closed.

**STORAGE AND STABILITY**

Sera and plasma, free of hemolysis:
- Stability 1 month at 2-8°C or 1 week at 15-25°C.

**SAMPLES**

Serum or plasma, free of hemolysis:
- Stability 1 month at 2-8°C or 1 week at 15-25°C.

**PROCEDURE**

1. **Assay conditions:**
   - Wavelength: 630 nm (600-650)
   - Temperature: 15-25°C

2. **Adjust the instrument to zero with distilled water.**

3. ** Pipette into a cuvette:**
   - Blank: 1.0 mL
   - Standard: 1.0 mL
   - Sample: 1.0 mL

4. **Mix and incubate for 5 min at 37°C or 10 min at 15-25°C.**

5. **Read the absorbance (A) of the samples and Standard, against the Blank. The colour is stable 1 hour at room temperature.**

**CALCULATIONS**

\[
\text{A(Sample)} - \text{A(Blank)} = \text{g/dL albumin in the sample}
\]

\[
\text{Conversion factor: g/dL x 144,9 = \mu mol/L}
\]

**QUALITY CONTROL**

Control sera are recommended to monitor the performance of assay procedures: SPINTROL H Normal and Pathologic (Ref. 1002120 and 1002210). If control values are found outside the defined range, check the instrument, reagents and calibrator for problems.

Each laboratory should establish its own Quality Control scheme and corrective actions if controls do not meet the acceptable tolerances.

**REFERENCE VALUES**

3.5 to 5.0 g/dL. These values are for orientation purpose; each laboratory should establish its own reference range.

**PERFORMANCE CHARACTERISTICS**

**Measuring range:** From detection limit of 0.0349 g/dL to linearity limit of 6 g/dL.

If the results obtained were greater than linearity limit, dilute the sample 1/2 with NaCl 9 g/L and multiply the result by 2.

**Precision:**

<table>
<thead>
<tr>
<th>Intra-assay (n=20)</th>
<th>Inter-assay (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (g/dL)</td>
<td>4.17</td>
</tr>
<tr>
<td>SD</td>
<td>0.22</td>
</tr>
<tr>
<td>CV (%)</td>
<td>4.20</td>
</tr>
</tbody>
</table>

Sensitivity: 1 g/dL = 0.2003 A.

Accuracy: Results obtained using SPINREACT reagents (y) did not show systematic differences when compared with other commercial reagents (x).

The results obtained using 50 samples were the following:

- Correlation coefficient (r): 0.99169
- Regression equation: y = 1.045x – 0.028

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

**INTERFERENCES**

- Bilirubin up to 110 mg/L, hemoglobin up to 1 g/L and lipemic sera up to 10 g/L no interfere.

A list of drugs and other interfering substances with albumin determination has been reported.

**NOTES**

1. **ALBUMIN CAL:** Proceed carefully with this product because due its nature it can get contaminated easily.

2. **Calibration** with the aqueous Standard may cause a systematic error in automatic procedures. In these cases, it is recommended to use a serum Calibrator.

3. **Use clean disposable pipette tips for its dispensation.**

4. **SPINREACT** has instruction sheets for several automatic analyzers.

**BIBLIOGRAPHY**


**PACKAGING**

- Ref: 1001020
- Ref: 1001022
- Ref: 1001023