Quantitative determination of hemoglobin

IVD

Store at 2-8°C

PRINCIPLE OF THE METHOD

Hemoglobin is oxidized by potassium ferricyanide into methaemoglobin, which is converted into cyanomethaemoglobin, by potassium cyanide.

The intensity of the color formed is proportional to the hemoglobin concentration in the sample.

CLINICAL SIGNIFICANCE

The hemoglobin is a protein that contains iron and that the red color of the blood. The hemoglobin is in red globules and it is the one in charge of oxygen transport by the blood from the lungs to the tissues.

When the level of hemoglobin appears high it can be due to: cardiopathies, dehydratation and stays in places of much altitude.

Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

REAGENTS

Hemoglobin Standard 15 g/dL

Additional reagents: Potassium ferricyanide, 0.60 mmol/L. Potassium cyanide, 77 mmol/L. Dihydrogen potassium phosphate, 2 mmol/L.

REAGENTS

Potassium cyanide

Optional

Hemoglobin Standard 15 g/dL

Animal origin

REFERENCE VALUES

Men 14 - 18 g/dL = 8.7 – 11.2 mmol/L
Women 12 - 16 g/dL = 7.5 – 9.9 mmol/L

These values are for orientation purpose; each laboratory should establish its own reference range.

PERFORMANCE CHARACTERISTICS

Measuring range: From detection limit of 0.1 g/dL to linearity limit of 20 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>8.00</td>
</tr>
<tr>
<td>SD</td>
<td>0.29</td>
</tr>
<tr>
<td>CV (%)</td>
<td>3.59</td>
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</tbody>
</table>

Sensitivity: 1 g/dL, 0.027 A.

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

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

INTERFERENCES

A list of drugs and other interfering substances with hemoglobin determination has been reported by Young et. al.

NOTES

SPINREACT has instruction sheets for several automatic analyzers. Instructions for many of them are available on request.

BIBLIOGRAPHY


PACKAGING

Ref: 1001230

R: 4 x 5 mL

Ref: 1001231

R: 4 x 50 mL, CAL: 1 x 1 mL