Hemoglobin Assay Kit (Colorimetric) ab234046

Overview

Product name: Hemoglobin Assay Kit (Colorimetric)
Detection method: Colorimetric
Sample type: Serum, Plasma, Whole Blood
Assay type: Quantitative

Product overview
Hemoglobin Assay Kit (Colorimetric) (ab234046) provides a quick and easy method for monitoring hemoglobin levels in a wide variety of samples. In this assay, the detector selectively converts heme into a stable chemical complex that absorbs maximally at 575 nm. The intensity of the color is directly proportional to the total concentration of hemoglobin in the sample. The kit can detect as low as 0.02 g/dL hemoglobin.

Notes
Hemoglobin (Hb) is an iron containing globular metalloprotein found primarily in red blood cells. It carries oxygen from the lungs to the rest of the body as oxyhemoglobin and then returns back to the lungs as deoxyhemoglobin. In most vertebrates, hemoglobin is in tetrameric form comprising two α-globin chains and two β-globin chains (α₂β₂). Each chain is associated with a non-protein heme group. Aside from oxygen transport, hemoglobin can bind and transport other molecules like nitric oxide and carbon monoxide. Hemoglobin also plays an important role in maintaining the shape of the red blood cells. Alterations in the structure and binding capacity of hemoglobin are associated with many blood disorders such as sickle-cell anemia and thalassemia.

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Platform
Microplate reader

Storage instructions
Store at +4°C. Please refer to protocols.

Components

<table>
<thead>
<tr>
<th>Components</th>
<th>200 tests</th>
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<tbody>
<tr>
<td>Hemoglobin Detector</td>
<td>1 x 50ml</td>
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<tr>
<td>Hemoglobin Standard (equivalent to 1 g/dl)</td>
<td>1 x 1ml</td>
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Relevance

Hemoglobin or haemoglobin (frequently abbreviated as Hb) is the iron-containing oxygen-transport metalloprotein in the red cells of the blood in mammals and other animals. It is primarily responsible for transferring oxygen from the lungs to the rest of the body. Fresh hemoglobin is produced in the bone marrow as needed. The hemoglobin molecule in humans is an assembly of four globular protein subunits. Each subunit is composed of a protein chain tightly associated with a non-protein heme group. In adult humans, the most common hemoglobin is called hemoglobin A, consisting of two alpha and two beta subunits non-covalently bound, each made of 141 and 146 amino acid residues, respectively. This is denoted as a2ß2. The subunits are structurally similar and about the same size. Each subunit has a molecular weight of about 16,000 daltons, for a total molecular weight of the tetramer of about 64,000 daltons. Mutations in the genes for the hemoglobin protein in humans result in a group of hereditary diseases termed the hemoglobinopathies, the most common members of which are sickle-cell disease and thalassemia.

Cellular localization

haemoglobin complex

Images

Hemoglobin Standard Curve (0-250 mg/dL).

Estimation of hemoglobin concentration in human plasma, serum, adult male, adult female and sickle-cell anemia patient. Whole blood samples were diluted 10-fold. Assays were performed in triplicate following the kit protocol using 20 µL of the samples.

Estimation of hemoglobin concentration in various samples.
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