## Overview

**Product name**  
Calcium Assay Kit (Colorimetric)

**Sample type**  
Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate, Cell culture media

**Assay type**  
Quantitative

**Sensitivity**  
> 0.1 mM

**Range**  
0.1 mM - 25 mM

**Assay time**  
0h 20m

**Species reactivity**  
Reacts with: Cat, Human, Mammals

**Product overview**  
Calcium Assay Kit (Colorimetric) (ab102505) provides a simple assay to determine calcium concentration within the physiological range of 0.4 – 100 mg/dL (0.1 – 25 mM). A chromogenic complex is formed between calcium ions and 0-cresolphthalein and measured at OD = 575 nm. This product detects free calcium ions only.

Visit our FAQs page for tips and troubleshooting.

**Notes**  
Calcium is essential for all living organisms, where Ca\(^{2+}\) sequestration and release into and out of the cytoplasm functions as a signal for many cellular processes. 99% of calcium is found in bones and teeth with the remaining 1% found in the blood and soft tissue. Serum calcium levels are tightly controlled (8.4-11.4 mg/dL) and any variation outside this range can have serious effects. Calcium plays a role in mediating the constriction and relaxation of blood vessels, nerve impulse transmission, muscle contraction, and hormone secretion. Calcium ion channels control the migration of calcium ions across cell membranes, permitting the activation and inhibition of a wide variety of enzymes. Causes of low calcium levels include chronic kidney failure, vitamin D deficiency, and low blood magnesium levels that can occur in severe alcoholism.

## Properties

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>250 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Assay Buffer</td>
<td>NM</td>
<td>1 x 15ml</td>
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</tbody>
</table>
Relevance

Calcium is essential for all living organisms, where Ca$^{2+}$ sequestration and release into and out of the cytoplasm functions as a signal for many cellular processes. 99% of calcium is found in bones and teeth with the remaining 1% found in the blood and soft tissue. Serum calcium levels are tightly controlled (8.4-11.4 mg/dL) and any variation outside this range can have serious effects. Calcium plays a role in mediating the constriction and relaxation of blood vessels, nerve impulse transmission, muscle contraction, and hormone secretion. Calcium ion channels control the migration of calcium ions across cell membranes, permitting the activation and inhibition of a wide variety of enzymes. Causes of low calcium levels include chronic kidney failure, vitamin D deficiency, and low blood magnesium levels that can occur in severe alcoholism.

Images

Ca$^{2+}$ concentration (millimolar) in various biologicals. Shown bars are average of values from dilutions neat to 1:8.

Example of standard curve obtained using ab102505

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