Product name: Sodium Assay Kit (Colorimetric)
Detection method: Colorimetric
Sample type: Saliva, Urine, Serum
Assay type: Quantitative
Sensitivity: 25 µM
Species reactivity: Reacts with: Other species, Mammals

Product overview:
Sodium Assay Kit (Colorimetric) (ab211096) provides a convenient two-step method to detect sodium ions (Na⁺) present in serum, urine, and saliva. In this assay, sodium ions present in the sample are used by the enzyme β-galactosidase to produce an intermediate product, which reacts with a developer to generate a color signal that can be detected at OD = 405 nm.

This kit can detect as low as 25 µM sodium in biological fluids. Endogenous mono-, di-, and trivalent ions, ascorbic acid, creatinine, glucose, urea, and bilirubin do not interfere with the assay.

Notes:
Sodium (Na⁺) is one of the most important electrolytes along with chloride, calcium, and potassium. Sodium plays vital roles in the maintenance of normal cell functions such as plasma volume, pH balance, and transmission of nerve impulses. Healthy individuals can absorb sodium ingested in food, and kidneys maintain proper sodium balance by excreting its excess in urine. Normal sodium intake has been defined to be between 200-500 mg/day. Hyponatremia (low sodium concentration in blood) can occur in patients with nephrotic syndrome, excessive vomiting, and diarrhea, while Hypernatremia (high sodium concentration in blood) is developed in patients suffering from liver diseases, burns, and pregnancy. Traditionally, sodium concentration in clinical settings is determined by potentiometric, gravimetry, photometry, titrimetry and flame atomic emission spectroscopy, but these methods require expensive and complex protocols that need to be performed by trained personnel.

Platform: Microplate reader

Storage instructions: Store at -20°C. Please refer to protocols.

Components:
- Na Assay Buffer: 1 x 25ml, 100 tests
Sodium Assay Kit (Colorimetric) (ab211096)

Typical Sodium standard calibration curve.

Assay Specificity: Sodium, and other mono, di and trivalent cations (15 nmol/0.15 mM each) were tested to evaluate possible interferences. Interferences were found to be < 10% when data was normalized using Sodium as 100% activity. Blank: Assay buffer/DTT.

<table>
<thead>
<tr>
<th>Components</th>
<th>100 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate</td>
<td>1 x 5ml</td>
</tr>
<tr>
<td>β-Gal</td>
<td>1 x 15μl</td>
</tr>
<tr>
<td>DTT (1 M)</td>
<td>1 x 0.25ml</td>
</tr>
<tr>
<td>Na Developer</td>
<td>1 x 10ml</td>
</tr>
<tr>
<td>Na Standard (1.5 M)</td>
<td>1 x 1ml</td>
</tr>
</tbody>
</table>

Images

Typical Sodium standard calibration curve.

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Estimation of sodium in human pooled serum off-the-clot (5 µL; 1:50 dilution) and human urine (10 µL; 1:100 dilution).

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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