

Serum Sodium Calcium and Potassium

Experiment 21 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To measure or interpret the assigned electrolyte results with their calibration and unit basis.

Principle

Sodium and potassium may be measured by ion-selective electrodes or emission methods. Calcium may be reported as total or ionised calcium using different methods. Specimen condition and method basis affect the result.

Requirements

- Coded teaching material or supplied electrolyte instrument data, calibration and controls.

Procedure

1. Identify methods

Record the measurement principle for sodium, potassium and calcium.

2. Check material quality

Review the stated material conditions and any haemolysis or contamination flag.

3. Measure or read

Use the supervised instrument demonstration or supplied results and record control performance.

4. Report

State analyte, method, unit, whether calcium is total or ionised, and any limitation requiring review.

Observations and Record

Analyte	Method / reporting basis	Result and unit
Sodium	_____	_____
Potassium	_____	_____
Calcium	Total / ionised	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Convert units only with the appropriate analyte valence and molecular-mass basis. A numeric mmol/L result must not be relabelled mg/dL.

Result

Record the completed observations, calculations and conclusion with units. State any limitation of the observation.

Precautions

- Avoid method-incompatible containers or contamination.
- A flagged result requires review; do not treat a teaching value as a patient-management instruction.

Viva Questions and Answers

1. Why distinguish total and ionised calcium?

They measure different reporting fractions and are not numerically interchangeable.

2. Why does material quality matter?

Handling artefacts can alter the concentration seen by the method.

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