

Estimation of Serum Creatine

Experiment 18 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To estimate creatine using an assigned enzymatic calibration exercise.

Principle

A validated creatine assay can produce a proportional colour through coupled enzyme reactions. Creatine is chemically distinct from creatinine, so the correct assay and analyte name are essential.

Requirements

- Simulated serum and creatine calibrators
- Assigned creatine assay kit and photometer; a selected product may use a 570 nm colour reading
- Product method sheet and controls

Procedure

1. Read method

Confirm the assay measures creatine, not creatinine; record specimen and interference requirements.

2. Calibrate

Prepare the product-specified blank and calibration series.

3. React

Use the prescribed kit volumes, timing and temperature.

4. Read

Measure the kit-defined response and verify control validity.

5. Calculate

Read concentration from the validated calibration curve and apply any dilution.

6. Report

State creatine units and keep the result separate from a creatinine result.

Biochemistry and Clinical Pathology

Observations and Record

Field	Actual record
Kit / analyte / wavelength	_____
Calibrator responses	_____
Test response / controls	_____
Curve-derived concentration	_____
Dilution / final units	_____

Worked Example

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

- Original linear teaching curve: 0 micromol/L gives response 0.000; 50 gives 0.250; 100 gives 0.500.
- A corrected response 0.300 corresponds to 60 micromol/L on this illustrative curve before any dilution factor.

Result

Record the observed outcome and calculated value, with units. State whether the stated laboratory specification was met; do not copy the worked example as your result.

Precautions

- Use the actual product calibration, which may not follow the illustrative line.
- Do not substitute a creatinine assay or its clinical interpretation.
- Use simulated biological material in the classroom.

Viva Questions and Answers**1. Are creatine and creatinine the same?**

No; they are different analytes with different assay schemes.

2. Why use a calibration curve?

It links the measured response to known concentrations over the validated range.

3. Why verify the kit name?

Similar analyte names can lead to the wrong assay and interpretation.

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