Physiological Salt Solutions

Experiment 2 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Teaching mode: use approved simulation, prepared demonstration records or supplied experimental data. No live-animal dosing, surgery or challenge is prescribed in these notes.

Aim

To explain the roles of physiological-solution components and check a supplied preparation record.

Principle

An isolated-tissue environment must maintain suitable ionic, osmotic and metabolic conditions. The assigned physiological solution is selected for the model and method.

Requirements

- Instructor-provided labelled diagrams, traces or data for this activity.
- Calculator, graph paper or spreadsheet, and the activity record.

Procedure

1. Read the assigned formula

Identify the physiological solution named in the demonstration; do not substitute one tissue formula for another.

2. Classify component roles

Discuss sodium/chloride for ionic environment, potassium and calcium for excitability, buffer for pH control and glucose where present for an energy source.

3. Review checks

Read supplied pH, appearance and preparation/storage records against the assigned method requirements.

4. Relate to the trace

Explain how a changed environment could alter a tissue response and confound an assay.

Observations and Record

Record item	Entry
Activity / material identifier	_____
Measurement or visible feature	_____
Comparison / calculated outcome	_____
Interpretation and limitation	_____

Result

The recorded finding is ____; the supporting observation or calculation is ____. The main limitation is ____.

Precautions

- Use the supplied teaching material; distinguish a measured observation from an assumed value.
- Keep units, axes, labels and measurement conditions consistent.
- Record limitations and seek instructor review before applying a conclusion to a live case.

Viva Questions and Answers

1. Why does calcium matter in many tissue preparations?

It participates in excitation-contraction coupling and other cellular processes.

2. Why use a defined solution?

Changing ionic or buffer conditions changes the biological response.

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