

Study of Common Laboratory Techniques - Simulation

Practical 05 | Pharmacology I

Aim

To study Common Laboratory Techniques - Simulation, and interpret the recorded observations.

Principle

- Serum is obtained after clotting; plasma is obtained with an appropriate anticoagulant. Blood collection, anaesthesia and euthanasia are studied through the assigned simulation/video.
- This exercise uses a software/video simulation or an instructor-provided dataset.
- A response depends on the model, intervention, controls and observation period; comparisons must use the same endpoint.

Materials and Apparatus

- Assigned model/video and labelled completed pharmacology observations.
- Assigned pharmacology simulation/video and completed observation dataset.
- Computer, graphing or calculation software and a structured record sheet.

Method

1. Identify the simulated preparation, control group and response being measured.
2. Record the model settings and treatment labels supplied in the exercise.
3. Review the baseline or control trace before comparing the intervention traces.
4. Read the stated response endpoint using the same definition for every group.
5. Tabulate the completed simulation observations and calculate the assigned comparison.
6. Explain the mechanism, control response and any limitation of the model.

Observation Record

Complete this record using actual laboratory findings or the provided teaching data.

Observation / parameter	Record / finding
Technique	_____
Purpose	_____
Serum/plasma distinction	_____
Observation	_____
Oversight point	_____

Calculations and Interpretation

- Prepare a technique-purpose comparison; no live-animal intervention is performed in this exercise.

Result

Report the supplied simulated response, its defined comparison and the mechanism supported by the model. Label the observations as simulated.

Finding: _____

Conclusion: _____

Precautions

- Keep software units, treatment labels and endpoint definitions consistent.
- Use supplied simulation data and distinguish an illustration from an observed outcome.
- A model demonstrates an experimental principle; it does not establish an individual patient treatment.

Viva Questions

1. Why use a control response?

It separates the intervention effect from baseline variation in the simulated model.

2. Why define the endpoint before comparison?

Changing the endpoint after reviewing results can bias the interpretation.

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