

Muscle-Relaxant Effect by Rotarod - Simulation

Experiment 13 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To assess a virtual coordination/relaxant response.

Principle

The rotarod model measures motor performance. A centrally acting relaxant or sedative can reduce latency to a programmed fall.

Hypothetical Dataset

These original figures illustrate analysis only. They are not live observations or dosing instructions.

Virtual record	Latency, s
Baseline	90
Treatment	45

Requirements

- Institution-approved pharmacology simulation such as ExPharm
- Predefined virtual control and treatment records
- Worksheet or spreadsheet for graphing and calculation

Procedure

1. Open the exercise

Select the named virtual model and read its endpoint and default settings.

2. Review controls

Record the baseline, vehicle/control and comparator entries supplied by the software.

3. Run the simulation

Use the instructor-assigned virtual treatment option; record the output and units.

4. Compare

Compare the defined endpoint between control and treatment; repeat a virtual run only if the exercise requires it.

5. Analyse

Use the supplied calculation or response trend and state possible confounders.

Pharmacology

6. Record

Save the virtual results and write an interpretation that identifies them as simulated.

Interpretation Guide

Reduced performance is compatible with the selected model effect but can reflect sedation, coordination changes or other motor influences.

Observations and Record

Group / run	Endpoint: Fall latency, seconds	Student record
Control	Baseline performance	_____
Treatment	Assigned relaxant such as diazepam	_____
Software / setting	Assigned virtual exercise	_____

Worked Example

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

- Reduction = $90 - 45 = 45$ s; percentage reduction = 50%.

Result

In the software exercise, _____ changed from _____ to _____. The result _____ supports the stated model effect. Confounders/limits: _____.

Precautions

- Use software only; no live animal, tissue collection or drug administration is performed.
- Do not alter safety or validity settings to make a desired result.
- A virtual output demonstrates the model's programmed response and is not a patient treatment recommendation.

Viva Questions and Answers

1. Does rotarod measure analgesia directly?

No; it measures a motor-performance endpoint.

2. Why compare baseline performance?

Initial capability influences the observed change.

3. Why identify the data as simulated?

It prevents a programmed result from being represented as a real experimental observation.

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