In Vivo In Vitro and Ex Vivo Studies

Experiment 5 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To understand and record the stated experimental-pharmacology concept.

Principle

These terms describe whether a study examines a whole living system, an artificial laboratory system or tissue removed from an organism.

Key Points

- In vivo: whole-system context.
- In vitro: controlled external system such as a cell or biochemical assay.
- Ex vivo: removed tissue studied outside its source organism.
- This practical class uses virtual representations rather than live systems.

Activity Procedure

1. Classify

Sort supplied study descriptions into the three categories.

2. Compare

List advantages and limitations of each context.

3. Identify variables

Discuss exposure, metabolism and endpoint differences.

4. Conclude

Choose which conceptual design addresses a given teaching question.

Record and Observations

Field	Teaching record
Model / instrument / route	_____
Endpoint / units	_____
Relevant control	_____
Interpretation / limitation	_____

Result

The concept was explained and the teaching record completed. Key finding: _____. Limitation: _____.

Viva Questions and Answers

1. Why can an isolated-tissue result differ from a whole system?

Metabolism, distribution and regulatory feedback may be absent.

2. Is a computer model itself in vivo?

No; it simulates selected features of a model.

3. Why define the study context?

It limits the conclusions that can be drawn.

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