

Dissolution Improvement Methods

Experiment 1 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To analyse the assigned dissolution improvement methods experiment or teaching dataset.

Principle

Particle size, wetting, solid state and formulation can change dissolution. An improved laboratory curve must be assessed under matched test conditions.

Requirements

- Institution-assigned experimental method and coded in-vitro or supplied pharmacokinetic data.
- Calibrated analytical readings or supplied concentration table, calculator and plotting tools.

Procedure

1. Design the comparison

Choose the assigned control and an authorised particle-size, wetting or formulation modification; state what is held constant.

2. Read the dissolution test

Record apparatus, medium, temperature, agitation and sampling schedule from the prescribed method.

3. Measure

Use calibrated concentration readings and record sampling/replacement corrections.

4. Compare

Plot percentage dissolved over time and assess the observed effect and variation.

Observations and Record

Record component	Value
Preparation / control	_____
Assigned test conditions	_____
Times / concentrations	_____
Corrected percent dissolved	_____
Comparison / limitation	_____

Biopharmaceutics and Pharmacokinetics

Worked Example

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

- Percentage dissolved = corrected dissolved mass / stated drug amount $\times$ 100.
- Example: 25 mg in solution from a 50 mg stated amount gives 50%, provided cumulative sampling is accounted for.

Result

Dataset / method: _____. Calculated outcome and units: _____. Comparison: _____. Assumption or limitation: _____.

Precautions

- Record units, sampling times, dilution and the assumptions of the selected model.
- Use supplied human/animal data or the approved in-vitro teaching method; no new human/animal dosing or surgical preparation is prescribed.
- Keep an illustrative calculation separate from the actual result and do not use it as an individual patient dosing instruction.

Viva Questions and Answers

1. Why state model assumptions?

The derived parameter is valid only when the data and model satisfy them.

2. What accompanies a pharmacokinetic result?

Its units, dataset, calculation method and relevant limitation.

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