Preparation and Evaluation of Buccal Dosage Form with UV Evaluation

Practical 17 | Instrumental Methods of Analysis and Novel Drug Delivery Systems

Aim

To study Preparation and Evaluation of Buccal Dosage Form with UV Evaluation, and interpret the recorded observations.

Principle

- A buccal film or tablet uses a suitable polymer system for mucosal contact. Drug content, mechanical properties, swelling/adhesion and release are separate attributes.
- A dosage form combines an active ingredient with excipients selected for processing, stability and performance.
- Preparation and evaluation are linked: changes in composition or process can alter the product quality attributes.
- Identify polymer, plasticizer and active-ingredient functions.
- Observe the assigned preparation and record finished unit dimensions/mass.
- Extract a defined unit for UV assay with suitable blank/interference checks.
- Evaluate the assigned swelling/adhesion and in-vitro release measures.

Materials and Apparatus

- Approved drug/polymer formula, laboratory preparation equipment and UV-assay/release apparatus.
- Assigned active ingredient, excipients and the instructor-approved master formula.
- Balance, mixing/preparation equipment, packaging materials and the assigned evaluation apparatus.

Method

1. Read the master formula and identify the purpose of each ingredient.
2. Calculate the quantities for the assigned laboratory batch and check ingredient identity.
3. Follow the specified order of addition and preparation process, recording actual quantities and process observations.
4. Measure the yield or finished quantity and package the laboratory preparation as specified.
5. Evaluate the product attributes listed for this dosage form with documented methods.
6. Compare the observations with the assigned specification and explain any difference.

Observation Record

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

Observation / parameter	Record / finding
Formula and unit size	_____
Thickness or strength	_____
Swelling/adhesion	_____
Extracted content	_____
Release profile	_____

Calculations and Interpretation

- Assay (%) = measured active amount/declared active amount × 100.
- For release measurements, apply the actual sampling and dilution corrections before calculating percentage released.

Result

Record the actual finding, calculated value with units where relevant, and a conclusion supported by the observations.

Finding: _____

Conclusion: _____

Precautions

- Record changes in process or composition; do not conceal a deviation.
- Use the specification assigned to the exact product and dosage form.
- A teaching batch is for laboratory evaluation and is not released for patient use.

Viva Questions

1. Why identify excipient functions?

Each excipient can influence processing, stability, release or acceptability.

2. Why is appearance alone insufficient for evaluation?

It does not establish content, performance, stability or microbiological quality.

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