

Chemical Identification of Aloes

Practical 18 | Pharmacognosy and Phytochemistry II

Aim

To identify Aloes, and interpret the recorded observations.

Principle

- A dried leaf exudate containing anthraquinone-related constituents; prepared class-test evidence is combined with material identity.
- Crude-drug identity is established through a combination of macroscopic, microscopic and chemical characteristics.
- A chemical class test is supportive and does not alone distinguish all adulterants or substitute materials.
- State the material type and the constituent class assessed by each assigned reaction.
- Record a positive result only when the relevant comparison and reagent control support it.

Materials and Apparatus

- Authenticated aloes teaching material and assigned completed chemical-test/comparison records.
- Authenticated drug material, a prepared comparison specimen or atlas, and assigned test reagents.
- Hand lens, microscope with prepared sections or powder mounts, glassware and a record sheet.

Method

1. Record the drug name, plant part or material type and the condition of the provided specimen.
2. Examine the macroscopic characters without tasting the material.
3. Study assigned prepared sections or powder mounts and sketch distinguishing structures.
4. Observe the assigned class test with the necessary positive or reagent comparison.
5. Combine the visible, microscopic and chemical evidence rather than relying on one feature.
6. Write a reasoned identification statement and document differences from the authenticated comparison.

Observation Record

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

Observation / parameter	Record / finding
Physical appearance	_____
Assigned test	_____
Test observation	_____
Comparison/control	_____
Identification conclusion	_____

Calculations and Interpretation

- Qualitative identity exercises usually require a structured comparison rather than a numerical calculation.

Result

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

Finding: _____

Conclusion: _____

Precautions

- Use an authenticated comparison and retain the specimen identity.
- Do not taste crude drugs or infer a clinical dose from an identification test.
- Distinguish a characteristic finding from a feature that can vary with processing or age.

Viva Questions

1. Why combine several identification features?

One character may be shared by unrelated materials or altered by processing.

2. Does a class test establish drug purity?

No. It indicates a chemical group and must be combined with other evidence.

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