

Introduction to investigation:  
Background to Aspirin and aims of laboratory work

Information - *Known*

Information - *Unknown*

Amount of active ingredient according to packaging  
Packaging states Aspirin as active ingredient  
Aspirin is acetyl salicylate derived from salicylic acid

Is the packaging correct ?  
Is there more than one active ingredient ?  
If 'Yes', what are their relative amounts?

Session 1 activity  
→

Simple extraction  
Chemical tests for salicylic acid & starch (tablets, extracts, SA)

Gravimetric determination of yield  
Reference 'colour' for SA test  
Probable presence of some SA in extract/tablet

Is the extraction method quantitative ?  
Is the extraction method selective?  
Detailed chemical composition of extract

Session 2 pre-lab  
→

Find alternative extraction method  
Find titrimetric method for determining composition of extract

Session 2 activity  
→

Soxhlet extraction and titration of extract  
Chemical tests for salicylic acid and starch

Gravimetric determination of yield  
Titrimetric analysis of extract (yield)  
Majority of extract contains  $\text{-CO}_2\text{H}$   
Chemical tests suggest 'some' salicylic acid  
Starch in residue

No positive test for acetyl salicylate  
Relative amounts of AS and SA (titration not selective)  
Any degradation during extraction

Sessions 3/4 pre-lab  
→

Find methods for analysis of mixtures of SA and AS  
Find reference data for SA and AS (IR, M.Pt.)

Sessions 3/4 activity  
→

Analysis of GC data for SA and AS  
HPLC analysis of extracts and standards  
M.Pt., IR and functional group tests for extract

Final conclusions  
→

Determination of absolute and relative amounts of AS and SA  
Comparison of data with packaging, etc

Author	Simon Belt
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