



12. Onion cells

Report: Anzor Dartsmelia

Opponent: Marita Machata

Reviewer: Tejas Krishnan

Team Georgia

Team Croatia

Team Switzerland

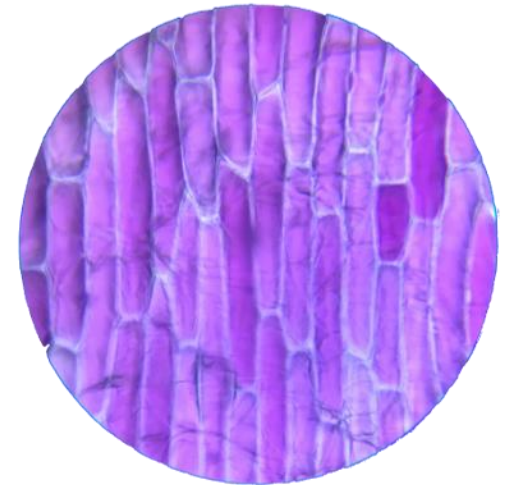




Task

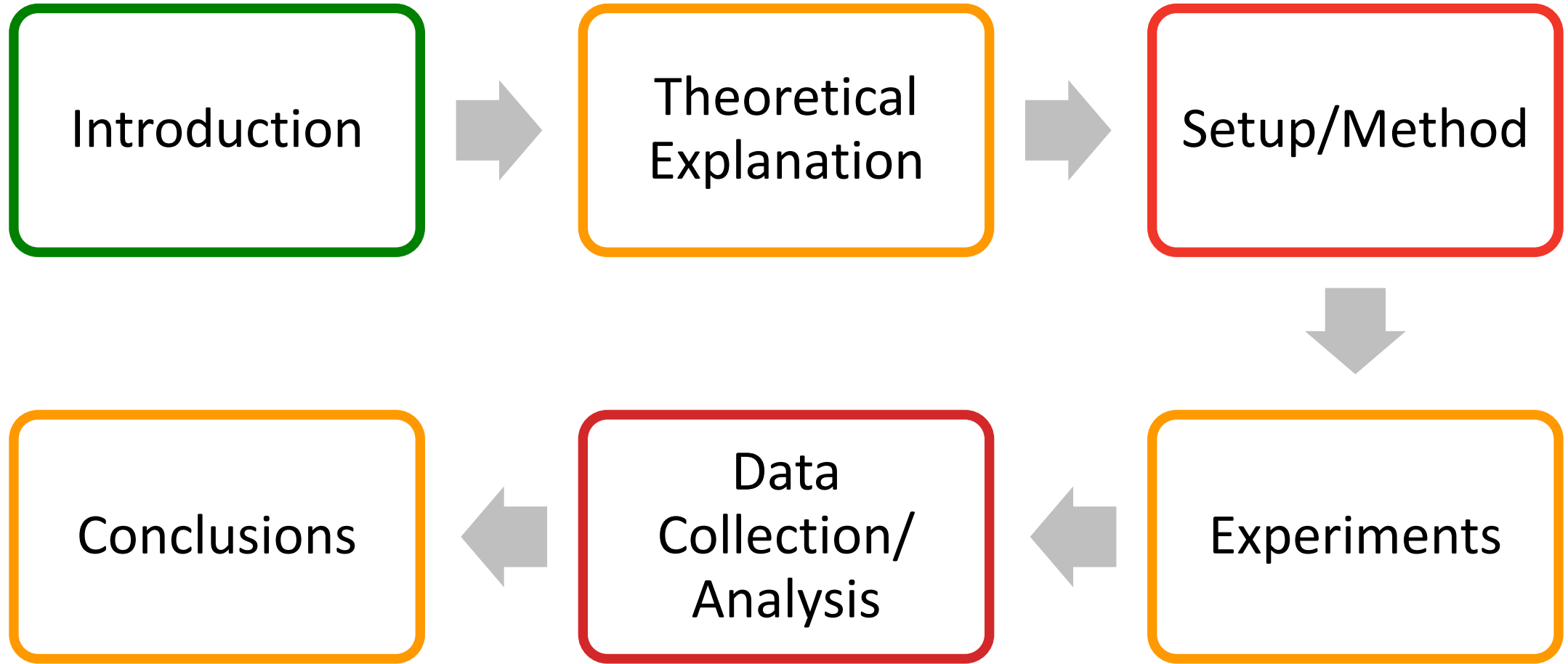
Investigate the effects of **various salts** on the structure of **onion cells**.


- Various salts
- Structure of onion salts
- Theoretical & experimental






Outline of Report



 Excellent

 Good

 Needs improvement



Explanation of Theory

- Explanation of plant cells
- Water potential equation → relevance/predictions (pressure potential?)
- DID NOT MENTION OSMOSIS
- Plasmolysed cells experiment
 - Unclear definition of plasmolysed cells → measurement
 - Axis?
 - Collection method?
- Different onions used?
- Maximum plasmolysis
 - Cell number
 - How was this measured?
- Impact of higher concentrations
- Reasoning for max. plasmolysed cells
- Higher concentration effect explanation

Rating: 3.5/6



Statement of Opponent

- Relevance of measurement
- Quantitatively structural analysis
- Water potential mentioned → not critiqued
- Proposed hypothesis → lack of theoretical correlation
- Random selection of cells plasmolysed
 - Inaccuracies, how was plasmolysis measured → other measurements?
- Importance of shape of vacuoles/color change?

Rating: 4.5/6



Discussion Topics

- Cause of color change
 - O: Can it be seen? Measurement of plasmolysis? Not instantaneous
 - R: Color decreases as the cell shrinks, time for water to exit
- Different dissociating ion count
- Cells with different connection points on membrane wall
 - R: dependent on molar concentration
- Explanation of vacuole concavity/convexity
- Biggest achievable plasmolysis
 - R: after addition of concentration, plasmolysis began



Performance

Reporter

Rating: 3.5/6

- + Answered opposing questions
- + Justification of data collection & solution

- Data analyses
- Unclear measurement process
- Lacking theoretical understanding

Opponent

Rating: 4.5/6

- + Good clarifying questions
- + Critiquing missing aspects
- + Discussion topics
- + Own opinion

- Cut off reporters answers
- Less productive discussion, unable to hear answers
- Quantitative measurement of plasmolysis

